IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF TEXAS

MARSHALL DIVISION

OPTIS WIRELESS TECHNOLOGY, LLC, PANOPTIS PATENT MANAGEMENT, LLC, OPTIS CELLULAR TECHNOLOGY, LLC, PLAINTIFFS	)(	CIVIL CASE NO. 2:17-CV-123-JRG-RSP
VS.	)(	MARSHALL, TEXAS
HUAWEI TECHNOLOGIES CO. LTD., HUAWEI DEVICE USA, INC., HUAWEI DEVICE CO. LTD., DEFENDANTS	)(	AUGUST 20, 2018 12:48 P.M.

TRANSCRIPT OF JURY TRIAL

BEFORE THE HONORABLE CHIEF JUDGE RODNEY GILSTRAP

UNITED STATES DISTRICT JUDGE

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P R O C E E D I N G S

(Jury out.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

Let's bring in the jury, please.

COURT SECURITY OFFICER: All rise for the jury.

(Jury in.)

THE COURT: Welcome back, members of the jury. Please be seated.

I now have some preliminary instructions that I want to give you before we start with opening statements from the lawyers and then get on to the evidence.

You've been sworn as the jurors in this case. And as the jury, you are the sole judges of the facts. As such, you will decide what the facts are in this case.

As the Judge, I'll give you instructions on the law that you are to follow, I will decide any questions of law, procedure, and evidence that might arise during the course of the trial. I'm also responsible for managing the flow of the evidence throughout the trial process and maintaining the decorum of the courtroom.

At the end of all the evidence, I'll give you detailed instructions about the law to apply in deciding this case, and I'll give you a list of questions you're then to answer. This list of questions is called the verdict form. Your answers to the questions will need to be unanimous, and they will constitute your verdict in this case.

Now, I briefly want to tell you what the case is about. As I think you understand, this case involves a dispute regarding five certain United States patents.

Now, I know that you've all seen the patent video film, but I want to give you some instructions here and on the record about a patent and how one is obtained.

Patents are granted or denied by the United States Patent and Trademark Office, sometimes for short called the PTO. A valid United States patent gives the patentholder the right for up to 20 years from the date the patent application is filed to prevent others from making, using, offering to sell or selling the patented invention within the United States or from importing it into the United States without the patentholder's permission.

A patent is a form of property called intellectual property. And like other forms of property, a patent can be bought or sold.

A violation of a patentholder's rights is called infringement. The patentholder may try to enforce a patent

against persons it believes to be infringers by filing a lawsuit in a federal court, and that's what we have before us in this case.

The process of obtaining a patent is called patent prosecution. To obtain a patent, one must first file an application with the Patent and Trademark Office, the PTO. The PTO is an agency of the United States Government, and it employs trained examiners who review patent applications.

The application includes what is called a specification. The specification contains a written description of the claimed invention telling what the invention is, how it works, how to make it, and how to use it.

The specification concludes or ends with one or more numbered sentences. These numbered sentences are the patent claims. While the -- while a patent is granted by the PTO, it's the claims that define the boundaries of its protection and give notice to the public of those boundaries.

Patent claims may exist in two forms. They're referred to as independent claims and as dependent claims.

An independent claim does not refer to any other claim in the patent. It is independent. It stands alone. It's not necessary to look at any other claim to determine what an independent claim covers.

However, a dependent claim refers at -- to at least one other claim in the patent. A dependent claim includes each

of the limitations or elements of that claim, as well as the limitation or elements of the other claim to which it refers or as we sometimes say from which it depends.

Therefore, to determine what a dependent claim covers, it's necessary to look at both the dependent claim itself and the independent claim or claims from which it refers or from which it depends.

The claims of the patents-in-suit use the word "comprising." Comprising means including or containing. A claim that includes the word "comprising" is not limited to the methods or devices having only the elements that are relied on in the claim but also covers methods or devices that add additional elements.

Take, for example, a claim that covers a table. If the claim recites a table comprising a tabletop, legs, and glue, the claim will cover any table that contains these structures, even if the table also contains other structures, such as a leaf to go in the tabletops or wheels to go on the ends of the legs.

Now, that's a very simple example using the word "comprising" and what it means. In other words, it can have other features in addition to those that are covered by the patent.

Now, after the applicant files the application with the PTO, an examiner is assigned and reviews the application to

determine whether or not the claims are patentable; that is, to say appropriate for patent protection, and whether or not the specification adequately describes the invention claimed.

In examining a patent application, the examiner reviews certain information about the state of the technology at the time the application was filed. The PTO searches for and reviews this type of information that is publicly available or that is submitted by the applicant. This type of information is called prior art. The examiner reviews this prior art to determine whether or not the invention is truly an advance over the state of the art at the time.

Prior art is defined by law, and I'll give you at a later time specific instructions as to what constitutes prior art. However, in general, prior art includes information that demonstrates the state of the technology that existed before the claimed invention was made or before the application for a patent was filed.

A patent contains a list of certain prior art that the examiner has considered. The items on this list, as set forth in the patent, are called the cited references. After the prior art search and examination of the application, the examiner informs the applicant in writing of what the examiner has found and whether the examiner considers any claim to be patentable; that is, to be allowed. And this writing from the examiner to the applicant is called an Office Action.

If the examiner rejects the claims, the applicant has an opportunity to respond to the examiner to try and persuade the examiner to allow the claims. The applicant also has a chance to change or amend the claims or to submit new claims. These papers generated during these communications back and forth between the examiner and the applicant are called the prosecution history. And this process may go back and forth between the examiner and the applicant for some time until the examiner is satisfied that the application meets the requirements for a patent. And in that case, the application issues as a United States patent. Or in the alternative, if the examiner ultimately concludes that the application should be rejected, then no patent is issued.

Sometimes patents are issued after appeals within the Patent and Trademark Office or to a Court.

Now, the fact that the PTO, the United States Patent and Trademark Office, grants a patent does not necessarily mean that the invention claimed in the patent, in fact, deserves the protection of a patent. While issued United States patents are presumed to be valid under the law, a person accused of infringement has the right to argue in federal court that a claimed invention in a patent is invalid.

It's your job to consider the evidence presented by the parties and to determine independently and for yourselves whether or not the Defendant has proven that a patent is

invalid.

Now, to help you follow the evidence, I'm going to give you a brief summary of the positions of the parties.

As you all know, the party that brings a lawsuit is called the Plaintiff. In this case, we have two Plaintiffs. The Plaintiffs in this case are Optis Wireless Technology, LLC, Optis Cellular Technology, and PanOptis Patent Management, LLC. And I said two, I should have said three Plaintiffs.

And together these three Plaintiffs are -- will be referred to throughout the trial as either the Plaintiffs or they may be collectively be referred to as PanOptis.

As you also know, the person against whom a lawsuit is filed is called the Defendant. In this case, we have two Defendants. Those Defendants are Huawei Device Shenzhen Company Limited and Huawei Device USA, Inc. Together these parties will be referred to simply as the Defendants or collectively as Huawei.

Now, as I told you during jury selection earlier today, this is a case of alleged patent infringement. And as I may have already mentioned, there are five separate United States patents that have been asserted in this case.

The first patent in this case is United States Patent No. 7,769,238. And as I'm sure you've been told, patents are commonly referred to by their last three digits in the patent number. So in this case, the 7,769,238 patent will simply be

called the '238 or the '238 patent.

The second U.S. patent at issue in this case is United States Patent No. 6,604,216, which will be referred to similarly as the '216 or the '216 patent.

The third United States patent issued and at issue in this case is U.S. Patent No. 8,385,284, which will be referred to as the '284 or the '284 patent.

The fourth patent at issue is United States Patent No. 8,208,569, which will be -- which will be referred to as the '569 or the '569 patent.

And the fifth and final U.S. patent at issue in this case is United States Patent No. 8,437,293, which will be referred to as the '293 or the '293 patent.

These patents are also able to be referred to at various times in the case collectively as the patents-in-suit. They're also sometimes called collectively the asserted patents. And these patents generally relate to cell phone technology.

Now, the Plaintiffs, PanOptis, contend that the Defendants, Huawei, are willfully infringing certain claims of the patents-in-suit by importing, making, or selling products that include their patented technology.

PanOptis, the Plaintiffs, also contend that they're entitled to money damages as a result of that infringement.

The Defendants, Huawei, deny that they are infringing

any of the pat -- any of the Plaintiffs' patents, and they contend that the asserted claims of the patents-in-suit are invalid as being anticipated or obvious in light of the prior art.

Now, members of the jury, I know there are several new words and new concepts that have been thrown at you today. I'm going to define a lot of those words and concepts for you as we go through these instructions. The attorneys are going to discuss them in their opening statements. The witnesses are going to help you by going through them in their testimony to help you understand these words and concepts.

So do not feel overwhelmed at this stage. I promise you, it will all come together as we go through the trial.

One of your jobs in this case is to decide whether or not the asserted claims of the five asserted patents have been infringed and whether or not they are invalid.

If you decide that any claim of the patents-in-suit has been infringed by the Defendants and is not invalid, then you'll need to decide whether or not the infringement by the Defendants has been willful.

You'll also then need to decide what amount of money damages should be awarded to the Plaintiffs as compensation for that infringement.

Now, as I've said, my job in the case is to tell you what the law is, to issue rulings on evidence and procedure and

to oversee the trial as efficiently and as effectively as possible.

In determining the law, it's specifically my job to determine the meaning of any language from within the asserted patents that needs interpretation. I've already determined the meanings of the claims of the patents-in-suit, and you must accept the meanings or the definitions that I give you and use those meanings and definitions when you decide whether any particular claim has or has not been infringed and whether or not any claim is -- is or is not invalid.

You're going to be given a document in a few minutes that reflects these meanings or definitions that the Court has generated and issued. For any claim for which I have not provided you with a definition or a construction, you should apply the plain and ordinary meaning.

Now, if I've provided you with a definition or a construction, you're to apply my definition or construction to those terms from the patent claims throughout the case. However, my interpretation of the language from within the claims should not be taken by you as an indication that I have a personal opinion or any opinion regarding the issues such as infringement and invalidity because those issues, members of the jury, are yours and yours alone to decide.

I'll provide you with more detailed instructions on the meanings of the claims before you retire to deliberate and

reach your verdict.

In deciding the issues that are before you, you'll be asked to consider specific legal rules. I'll give you an overview of those rules now, and then at the conclusion of the case, I'll give you much more detailed instructions.

The first issue that you're asked to decide is whether the Defendants, Huawei, have infringed any of the asserted claims of the patents-in-suit. Infringement, members of the jury, is assessed on a claim-by-claim basis.

The Plaintiffs, PanOptis, must show by a preponderance of the evidence that a claim has been infringed, therefore, there may be infringement as to one claim but no infringement as to another claim. As I say, claims must be assessed -- infringement must be assessed on a claim-by-claim basis.

There are also a few different ways that a patent can be infringed. I'll explain the requirements for each of these types of infringement to you in detail at the conclusion of the case.

But in general, a Defendant may infringe the asserted patents by making, using, selling, or offering for sale in the United States or by importing into the United States a product meeting all the requirements of a claim of an asserted patent without the permission of the patentholder.

I'll provide you with more detailed instructions on

these requirements for infringement at the conclusion of the case.

Now, the second issue that you're going to be asked to decide is whether any of the asserted patents in the case are invalid. Invalidity, members of the jury, is a defense to infringement. Therefore, even though the PTO has allowed certain claims and even though a patent is presumed to be valid, you, the jury, must decide whether those claims are invalid after hearing the evidence presented during this case.

You may find a patent claim to be invalid for a number of reasons, including because it claims subject matter that is not new or because it is obvious.

For a patent to be invalid because it's not new, the Defendants must show by clear and convincing evidence that all of the elements of a claim are sufficiently described in a single printed -- previous printed publication or patent. We call these items prior art. If a claim is not new, it is said to be anticipated by the prior art.

Another way that a claim can be found to be invalid is that it may have been obvious. Even though a claim is not anticipated because every element of the claim is not shown or sufficiently described in a single piece of prior art, the claim may still be invalid if it would have been obvious to a person of ordinary skill in the field of the technology of the patent at the relevant time.

You'll need to consider a number of questions in deciding whether the invention claimed in the asserted patents is obvious.

I'll provide you with more detailed instructions on these questions at the conclusion of the trial.

If you decide that any claim of the patents-in-suit has been infringed and is not invalid, then you will need to decide whether the Defendants' infringement has been willful. You will also need to decide what amount of money damages should be awarded to the Plaintiffs to compensate them for that infringement.

A damage award must be adequate to compensate a patentholder for the infringement, and in no event may a damage award be less than what the patentholder would have received had it been paid a reasonable royalty for the use of its patent.

However, any damages that you award are meant to compensate the patentholder, and they are not meant to punish the Defendants. You may not include in any damage award that you might make an additional amount as a fine or a penalty above what is necessary to fully compensate a patentholder for the infringement.

Additionally, damages cannot be speculative, and the Plaintiff, PanOptis, must prove the amount of its damages for the alleged infringement by a preponderance of the evidence.

I'll give you more detailed instructions on the calculation of damages for the Defendants' alleged infringement of the patents-in-suit at the conclusion of the trial, including by giving you specific instructions with regard to the calculation of a reasonable royalty.

However, the fact that I'm instructing you on damages does not mean that the Plaintiffs are or are not entitled to recover damages.

Now, members of the jury, you're going to be hearing from a number of witnesses over the course of this trial. And I want you to keep an open mind while you're listening to the evidence and not decide any of the facts until you have heard all the evidence.

This is important. While the witnesses are testifying, remember, you will have to decide the degree of credibility and believability to allocate to each of the witnesses and the evidence that they present.

So while all the witnesses are testifying, you should be asking yourselves things like this: Does the witness impress you as being truthful? Does he or she have a reason not to tell the truth? Does he or she have any personal interest in the outcome of the case? Does the witness seem to have a good memory? Does -- did he or she have an opportunity, an ability to observe accurately the things that they have testified about? Did the witness appear to understand the

questions clearly and answer them directly? And, of course, does the witness's testimony differ from the testimony of any other witness, and if it does, how does it differ?

These are some of the kinds of things that you should be thinking about while you're listening to each and every witness over the course of the trial.

Now, members of the jury, I also want to talk to you briefly about expert witnesses. When knowledge of a technical subject may be helpful to you, the jury, a person who has special training and experience in that particular field, we refer to them as an expert witness, is permitted to testify to you about his or her opinions on those technical matters.

However, you're not required to accept an expert's or any other witness's opinions at all. It's up to you to decide whether you believe an expert witness or any witness for that matter, whether you believe what they're telling you is correct or incorrect, whether or not you want to believe what they say to any degree or to no degree.

Now, I anticipate that there will be expert witnesses testifying in support of both sides of this case. But it will be up to you to listen to the expert witness's qualifications when they testify. When they give an opinion, and explain their basis for it, you will have to evaluate what they say, whether you believe it, and to what degree, if any, that you want to give it weight. Remember, judging and evaluating the

credibility and the believability of each and every witness is an important part of your job as the jury.

Now, during the course of the trial, it's possible that there will be testimony from one or more witnesses that are going to be presented to you through what we -- through what we call a deposition.

In trials like this, it's difficult, if not impossible, to get every witness here in person at the same time. So before the trial begins, lawyers for both sides take the depositions of the witnesses.

In a deposition, the witness is present, they're sworn and placed under oath. A court reporter is present. And counsel for both sides of the case are present. The witnesses are asked questions under oath, and they respond by giving answers. Those questions and those answers are recorded, and a record of it is made. Portions of those recordings often made as video recordings can be played back to you, the jury, during a trial such as this so that you can see the witness and hear their testimony even though they're not physically present in the courtroom.

That deposition testimony is entitled to the same consideration insofar as possible and is to be judged as to the credibility and weight and believability of the witnesses just in the same way as you would if the witness were present in person and testified live from the witness stand in open court.

Now, during the course of the trial, it's possible that the lawyers for one or both sides will make from time to time certain objections, and when they do, I will issue rulings on those objections.

It's the duty of an attorney to object when the other side offers testimony or other evidence that the attorney believes is not proper under the rules of the Court and the rules of evidence.

Upon allowing the testimony or other evidence to be introduced over the objection of an attorney, the Court does not, unless expressly stated, indicate an opinion about the weight or effect of that evidence. As I've said, you, the jury, are the sole judges of the credibility and believability of all the witnesses and the weight and effect to give to all of the evidence.

Now, I'd like to compliment the lawyers for both sides in this case because up until today, they have worked with the Court very diligently and very hard to cover the exhibits that will be used during this trial.

The exhibits in this case, members of the jury, have all been pre-admitted by the Court, and Court has reviewed any and all objections as to their admissibility and propriety. Therefore, the parties are not going to have to go through the process of formally offering, arguing, and presenting exhibits during the course of the trial. That's already been done. The

Court has already considered and ruled on the admissibility of all the exhibits.

That means those exhibits can simply be shown to you, the jury -- jury during the course of the trial, without all those prerequisites that take a lot of time. So I can tell you, even though you may not fully appreciate it, counsel for both sides and the Court, by working together in advance of the trial to pre-admit all the exhibits, have saved you a lot of time and a lot of argument that you would have to sit and listen to if it were done -- done during the course of the trial. That's already been done. It won't be necessary.

And so when the parties show you an exhibit during the course of the trial, it means the Court's already ruled on its admissibility, and they'll simply be able to present it and ask you (sic) such questions as they believe are proper to put it in the right context.

But I want you to know, both sides have worked hard and diligently to do that, and that has saved us all a lot of time now that we have gotten to the trial in this case.

However, it's still possible that over the course of the trial, objections may arise. If I should sustain an objection to a question addressed to a witness, you must disregard the question entirely, and you may draw no inference or -- from its wording or speculate about what the witness would have said if had I allowed them to answer the question.

If, on the other hand, I overrule an objection to a question, then you should consider the question and the answer just as if no objection had ever been made.

Now, you should know, ladies of the jury, that the law of the United States permits a judge to comment to the jury regarding the evidence in a case. But such comments from the judge to the jury are only expressions -- expressions of the judge's opinion, and the jury may disregard those comments in their entirety, because as I've said before, you, the jury, are the sole judges of the facts, the sole judges of the credibility of the witnesses, and the weight to be given to the testimony that's presented.

Now, even though the law of the United States permits me as a United States District Judge to comment to you, the jury, over the course of the trial about the evidence, I'm going to work very hard not to do that and not to express myself or comment to you about the evidence over the course of the trial.

And, therefore, you should not take any expression that you think you see or think you hear as coming from me as something to consider in deciding the ultimate facts in this case.

Now, our court reporter, Ms. Holmes, in front of me is taking down everything that's said in the courtroom, and she will take down everything that's said from anyone during the

remainder of the trial. But the written transcript of that will not be available for you to consult or use during your deliberations. That transcript is prepared in case there is an appeal of this trial to a different -- to a higher court.

That means, members of the jury, you're going to have to rely on your memories of the evidence in this trial. In a moment, you're each going to be given a juror notebook. You'll find that in the back of that notebook, there is a blank legal pad with plenty of pages that you can use to take notes if you wish to. You'll also find a pen in the front flap of those notebooks. It's up to each of you to decide whether or not you want to take notes over the course of the trial, and if you do, how detailed you want those notes to be.

But, remember, any notes that you take are for your own personal use, and you're going to have to rely on your own memory of the evidence, which is why you should be paying close attention to the testimony of each and every witness over the course of the trial.

You should not abandon your own recollection because some other juror's notes indicate something differently. The notes are to refresh your recollection, and that's the only reason you should be keeping them.

I'm now going to ask our Court Security Officer to hand out these notebooks to each of the members of the jury.

In these notebooks, members of the jury, you'll see

that you each have a copy of each of the five asserted patents that we've talked about.

You'll also find a section in there where you have what are called witness pages. For every witness that the Court expects to testify, you'll find a page with their photograph, a head and shoulder's photograph of the witness, and their name at the top of the page and the remainder of the page with ruled lines on it for additional note taking. The Court found that -- the Court has found that it has been helpful to jurors to be able to look back and see a picture of the person that testified over the course of the trial, just not a name. Especially when there are multiple witnesses that you're going to be hearing from.

When you leave each day, I'm going to ask you to take those notebooks and leave them closed on the table in the jury room. They should either be in your possession, in the jury box where you are, or they should be closed and on the table in the jury room. They shouldn't be anywhere else.

Now, there may be times during the course of the trial that we're going to have a relatively short recess, and rather than you take them back and forth to the jury room in that case, I may simply say: Members of the jury, you can leave your notebooks in your chairs. And if I do that, then you can simply leave them in your chairs because we'll be in a short recess, and you'll be back.

But at the end of the day, make sure they are left closed on the table in the jury room, or otherwise they're in your own possession.

As I noted in the back, you'll find there's a legal pad that you can use for additional note taking if you choose to take notes over the course of the trial.

You should also find in there a list of the terms from the claims that are in issue that the Court has construed and the constructions or definitions or meanings for those terms that the Court has provided you with. And as I previously instructed, you're required to use those meanings when you're deciding the issues that you are asked to decide such as infringement and invalidity.

Again, if there's a term in the claims that I have not construed or defined or given you a meaning for, then you should apply the plain and ordinary meaning to that term. But that list of construed or defined terms from the claims that the Court has already generated should also be in those notebooks for you.

Now, in a moment, we're going to hear the lawyers present their opening statements for each side in the case. These opening statements are designed to give you a roadmap of what each side expects the evidence to show over the course of the trial.

Remember, throughout the course of the trial, that

what the lawyers tell you in this case is not evidence. The evidence is the sworn testimony presented from the witnesses that you'll hear from the witness stand that are presented in open court and from the exhibits that have already been reviewed and approved by the Court as to their propriety, admissibility that are offered in evidence over the course of the trial. That is the evidence in this case, not what the lawyers tell you.

What the lawyers tell you is simply their own expression of what they believe the evidence will show, and they have a duty to point out what they believe the evidence is. But, remember, what they tell you is not evidence.

Now, after the opening statements are given by each side, the Plaintiffs will proceed to put on what is called their case-in-chief. The evidence (sic) will call their witnesses and present their evidence. After the Plaintiff -- I'm sorry, the Plaintiffs will present their case-in-chief, and the Plaintiffs will call their witnesses and put on their evidence.

After the Plaintiffs have put on their case and called their witnesses, then they will rest, and the Defendants will then proceed to call their witnesses and put on their evidence.

After the Defendants have put on their evidence in the case, they will rest. And at that point, the Plaintiff has the opportunity to present what is called rebuttal evidence that is

intended to rebut any of the evidence of the Defendants.

Once the Plaintiffs have put on their rebuttal case, then you will have heard all the evidence in this -- in the case. At that point, the Court will give you its final instructions, and the Court's final instructions are sometimes called the Court's charge to the jury.

Once I have given you the Court's charge or the Court's final instructions on the law, then the lawyers for both sides will present their closing arguments.

Once you've heard the closing arguments from counsel, at that point, I will instruct you to retire to the jury room, to consider all of the evidence, and to deliberate on the verdict that you'll return in this case.

That's a roadmap of procedurally how you can expect the case -- the trial to go over the next several days.

I want to remind you, members of the jury, as I said earlier today, that the lawyers, the witnesses, the support staff, everyone affected and related to each side in this case has been instructed not to communicate with you.

So if and when you pass them, if and when you're in close contact with them here at these -- at the courthouse, don't expect them to visit, don't expect them to be friendly, don't expect them to engage you in conversation. That's because -- they're not being rude, and you should not hold it against them, it's simply because that's what the Court has

instructed them to do.

All right. Having given you these preliminary instructions, we'll now hear opening statements from both the Plaintiffs and then the Defendants in the case.

Mr. Stevenson, you may proceed to present the Plaintiffs' opening statement.

Would you like a warning on your time?

MR. STEVENSON: Two minutes, please.

THE COURT: All right. You may proceed when you're ready.

MR. STEVENSON: May it please the Court.

Members of the jury, this is a case about trespass on intellectual property rights. PanOptis owns five patents that cover important innovations in cellular telephones. Four of those patents pertain to the radio connection between the cell phone and the cell tower, and one of the patents pertains to improvements in video compression technology.

Many leading phone manufacturers use these inventions in their products, and they've agreed to pay royalties to PanOptis for permission to use its inventions.

We've come to court because the Defendant, Huawei, is using PanOptis's invention in its phones without permission and without paying any compensation. And we're asking you to award PanOptis compensation for the use of its inventions by Huawei.

The products at issue in this case are 4G cell phones,

and 4G stands for fourth generation. There's a good chance the phone you own is a 4G phone. And today's 4G phones are the result of an evolution in technology that began in the 1980s.

You may remember the first generation of cell phones, 1G phones. And all they could do is make voice calls. Then in the early '90s, 2G or second generation phones came along, and they could do some basic data functions and maybe some texting.

But it wasn't until 3G phones or third generation phones came along in 2002 that phones could actually access the Internet, albeit very slowly. And then in 2008 was the big jump to 4G phones, fourth generation which is what we have today. And today, you can stream high quality audio and video, you can send and receive pictures almost instantly, and you can browse the Internet very quickly.

And this parade of technology, the improvements in the phones that brought us to where we are today are nothing short of amazing, and they're due in large part to improvements in the radio connection between your phone and the cell tower that may be miles away, as well as improvement in video compression. And it's truly amazing, we can walk around today with these little devices in our pockets and stream and watch video, send pictures, and keep in touch.

And 5G is up next, and it's going to be even faster and better.

The inventions in PanOptis's patents improve both the

radio connection and video compression. And all five patents in this case have contributed to that performance jump from 3G to 4G that we enjoy today.

Now, before getting into the patents, let me say a few words about the parties. My client, PanOptis, is a patent management company, and many of the world's leading technology companies turn to PanOptis to help them manage their patent portfolios. You'll hear the word "portfolio" in this case, and the word "portfolio" just means a group of patents that relate to a shared technology.

Managing a patent portfolio entails a lot of work. There are maintenance fees to pay, continuing applications to draft, you have to analyze patents to determine essentiality, handle licensing negotiations, and, when necessary, initiate enforcement litigation.

And this is what PanOptis -- PanOptis offers.

PanOptis is a family of affiliated companies. Two of the other Plaintiffs in this case, Optis Cellular and Optis Wireless are part of the PanOptis family, and overall, the PanOptis family of companies has about 50 employees. Its group is headquartered here in Texas with offices in Plano and in Dallas. And the people who work for PanOptis include licensing professionals and engineers from some of the world's leading technology companies, including a former head of intellectual property for Texas Instruments, a former head of intellectual

property for Ericsson, and former senior licensing professionals from Motorola, Qualcomm, and other companies.

The Defendant in this case is Huawei. And you may not have heard of Huawei before this case, but Huawei is one of the top three cellular phone manufacturers in the world, trailing only Apple and Samsung. Their headquarters are in Shenzhen, which is in the Guangdong Province of China, and they're founded in 1987. And over the last 31 years to today have grown to 170,000 employees.

And Huawei's U.S. sales are low. Huawei sold over 150 million cellular phones worldwide last year. And by comparison, Apple sold about 200 million phones worldwide, and Samsung sold over 300 million phones worldwide last year.

Why did PanOptis bring this lawsuit? Ericsson and Panasonic, two leading technology companies in the cellular area, transferred a patent portfolio to PanOptis, which PanOptis paid for, and now manages and licenses. And as part of that engagement, Ericsson and Panasonic will receive a portion of any licensing fees or damages.

We're here because Huawei's phones include inventions covered by the five patents that are asserted here from that portfolio.

Now, PanOptis has been willing to license Huawei, in other words, grant Huawei permission to use these inventions on fair financial terms. But to date, Huawei has refused to pay

fair value for a license, and even though it doesn't have permission to use these patents, Huawei continues to include the patented inventions in its phones.

And that, members of the jury, is patent infringement, and that is why we brought this lawsuit.

Let's turn now to the inventions. And due to time constraints, I'll introduce the inventions in the five patents at a high level here in my opening, but during the testimony of this -- in this case, two of the members of our legal team Ms. Woodin and Mr. Burgess will present witnesses who will explain this technology to you in much more detail and help you understand it better.

Of the five patents, four of the patents, as I alluded to, make the radio connection more efficient, and I'll call those the radio patents. They do things like jointly encoding control-channel information, time-first mapping, triggering events and incremental redundancy. And the one video compression patent deals with efficient selection of encoding tables.

Let me start at a high level to discuss the radio patents.

Central to every cell phone is a radio, voice, data all come into and out of your phone via video connection, and those radio waves go to a cell tower. You've seen them on the side of the road, the -- the metal towers with the rectangular

antennas on them. And each cell tower connects to thousands of cell phones at a time.

This is a coverage map of Marshall for one of the carriers, and it shows the location of cell towers owned by that wireless carrier, and as you can see, there's a handful them sometimes miles away. And all of us in this room have a cell phone or are probably connected who use the same carrier to the same cell tower.

Now, the radio signal between the phone and the cell tower travels over a fixed band or fixed group of radio frequencies, and this is called bandwidth. The frequencies or the bandwidth are allocated to wireless carriers by the U.S. FCC, and we can't make any more. You can think of this a little bit like a highway with a fixed number of lanes through which the data flows. So in this example the data -- the voice and data are the cars, and the -- the number of highway lanes are the fixed bandwidth.

The total available bandwidth limits how fast all the phones connected to the cell tower can get their data. And because thousands of phones connect to the same cell tower, the phones compete with each other and have to share this bandwidth that is fixed with all the other phones. Thus, it is very, very important to make the most efficient use of the bandwidth that can possibly be done, and that's where the PanOptis patents come in.

Some of the limited bandwidth in a cell system has to be used for a control channel. That's just mandatory. And the control channel controls how the phone communicates. The cell tower controls when your phone speaks, when it listens, how much power it uses, a whole raft of things. But, unfortunately, this control channel, which doesn't actually transmit the width of data that we consume itself, takes up some of the valuable bandwidth.

Back to our highway example, it would be like closing off lanes. And what that ends up doing is restricting the voice and data, which is what we as users care about.

Three of the four PanOptis radio patents improve the efficiency of the control channel, which then leaves more room for voice and data to get through to the users. It would be like closing one lane on a highway instead of two lanes, if we make the control channel more efficient.

The fourth radio patent improves the read transmission efficiency when transmission of data or voice are lost or garbled.

As a result of these patents and the patented improvements in the radio, there's over a 6 percent increase in overall bandwidth gains from using PanOptis's invention, which is a very big improvement in a network.

Now, let's talk about the video compression patent. Video is essentially a quick succession of images that fools

the eye into perceiving motion. Video on your phone, likewise, is a quick succession of frames or quick succession of pictures that produces the illusion of motion. But unfortunately, a picture is a very big file. It takes a lot of bandwidth to transmit a picture. And when you consider that video maybe 30 to 60 pictures per second, transmitting video takes a staggering amount of bandwidth.

So one of the earlier ideas to -- to improve video and make it take less bandwidth was something called video compression. And the idea there is simply instead of sending every single picture, we calculate what has changed since the prior picture and just send the changes. And that helps a lot, but even with video compression, video still takes a lot of bandwidth. It is a bandwidth hog.

And here's where the patent of PanOptis that deals with video compression comes in. The PanOptis patent further increases efficiency by recognizing that video information frequently involves repeating sequences or repeating patterns of data. And the idea is to put those repeating patterns or sequences into tables, they're called encoding tables, okay?

And you can represent a long sequence of data with a smaller code. Then, instead of sending the long sequence, you just have to send the code, and that improves the efficiency of compression.

The PanOptis patents refine that idea by identifying

the optimal video coding table or encoding table to uses and that is tailored to the specific video being sent and the sequences or patterns of data likely to be in that video. That patent improves bandwidth savings by 8.4 percent when video is transmitted to a phone, which, again, is a very large bandwidth savings.

Having talked about the patents, let's talk now about infringement.

It's a violation of the United States Patent Act to import, offer, or sell a device that infringes a United States patent. Huawei violates the Patent Act when it imports into the United States infringing phones, and it further violates the Patent Act when it offers and sells phones in the United States.

Whether a device infringes a patent depends on whether the device does what is described in the claims. And as you may recall from the video that the Court presented to you this morning, a patent is in many ways like a deed to a piece of property. It grants the owner the right to keep people off the property or to charge them a fee like rent for using it.

So proving infringement is like proving trespass on land. In other words, showing that Huawei has stepped on PanOptis's property with PanOptis's property being defined by the claims of the patents.

Infringement in this case, as Judge Gilstrap has

indicated, will be determined by you. And you can do so in this case by comparing two standards that define the 4G radio connection and the video compression standard to the claims of the patent. And let me discuss that.

In 4G phones, the radio connection is standardized. And what that means is there is a common industry blueprint for how to perform the radio function, and it's a very complicated radio.

All 4G manufacturers have to use the same standardized radio connection, and that's why if you have a Samsung phone, you can communicate through an Ericsson cell tower to a Huawei phone on the other end seamlessly without having to worry about it.

The blueprint for the 4G standard is -- is called also the LTE standard. LTE stands for long-term evolution, it's basically synonymous with 4G, they're interchangeable. And this is a document -- I'm holding one chapter of it, it's a multi-chapter document -- that is essentially the blueprint for how to create this radio connection in a phone.

It was -- this was created by the Third Generation Partnership Project, which is a consortium of industry leaders, including Ericsson and Panasonic engineers. It is thousands of pages. And the slide on the screen is just a sampling of some of the pages to give you a flavor for how technically detailed this blueprint it.

The four PanOptis radio patents asserted in this case are essential to this standard. And Ericsson and Panasonic, from whom PanOptis obtained the patents, were contributors. They helped create the LTE standard that you will see.

And so here's what that means. Phones built according to this standard necessarily infringe the patents because if the patent is essential, which our four radio patents are, if a phone uses the LTE or the 4G standard, it must infringe the patents. So, therefore, anyone who sells a 4G or LG phone -- excuse me, LTE phone needs permission from PanOptis under its essential patents.

Now, the video compression patent relates to a separate standard called the H.264 standard. It's another technically detailed standard. Again, I'm showing you a -- one chapter from its multi-chapter document. It's a video standard. And like the LTE standard, it's a common industry blueprint for how to do video.

It was created by the motion picture experts group in partnership with the International Telecommunications Union. Huawei phones, likewise, use the H.264 standard, and they infringe the video com -- compression patent, as well.

To prove infringement, PanOptis has the burden of proving by a preponderance of the evidence -- that's, you know, more likely than not, one more BB on the scale -- that Huawei infringes. And we happily accept and embrace that burden. To

meet the burden, we're going to compare the LTE and H.264 standards, those blueprints, to the claims of our patents to show you they are essential and they're infringed.

And we're not just going to rest on the standards and stop there. We will also show you source code, which are the computerized instructions that make the phones do what they do, which also confirms infringement.

And, finally, we're also going to rely on stipulations. In this case, Huawei has conceded -- admitted that its phones use the portions of the LTE and H.264 standards, those blueprints, that are relevant to the patents. You have those stipulations in your notebook. They are contained at a tab called Stipulations about halfway back. You can accept these as proven facts without the ability -- or, excuse me, without the need for us to submit additional proof.

And since these are standard essential patents, which means that using the standard must infringe them, Huawei's stipulation is essentially a concession of infringement.

Now, we've pared down our case for trial. The five patents at issue here contain 139 claims in total, and each one is a separate invention. But due to time limits in this trial, we will present to you one or two claims per patent. But if Huawei infringes even one claim of a patent, it infringes that patent.

The presentation of evidence will be through the

questioning of witnesses, and we will present three experts on behalf of Optis, Dr. Vijay Madisetti, Dr. Rich Gitlin, and Dr. James Womack. All three have doctorates in electrical engineering and decades of experience in the technical areas relevant to this case. Each one has conducted a very thorough analysis of the patents and the standard and has concluded that Huawei infringes these patents.

After receiving our proof, we believe you, too, will likewise conclude that Huawei infringes these patents, and it should have obtained a license from PanOptis for permission to include these features in its products.

I expect Huawei will advance a number of arguments to you to try to convince you that they don't infringe and they don't need to take a license to these five patents.

First, I believe Huawei will contest the validity of the patents at issue by arguing that they were merely obvious technical solutions.

As you -- as you recall from the video that the Court presented you with this morning, each patent in this case was examined by skilled patent examiners. And one of the things the examiner considers in reviewing the patent is whether it would be obvious to a person of skill in the art. But because these patents were awarded after full examination, they are presumed to be valid. And thus to overturn the patent, Huawei must present clear and convincing evidence -- that's the higher

burden of proof that Judge Gilstrap instructed you on -- that the examiners made a mistake when they found the patents were not obvious after reviewing them.

Now, to attempt to discharge its burden, Huawei, I believe, will present you with prior art. Those are publications or patents that precede or are earlier in time than our patents. But I predict that they won't show you a single piece of prior art that contains all the inventive features contained in the PanOptis claims. In other words, their prior art will be missing elements. It will have holes in it.

And Huawei will argue that don't worry about that, these prior art references and the devices described in them can merely be modified to add the missing elements or patch over the holes and make them just like the PanOptis patents. But the modifications Huawei is going to suggest are based on impermissible hindsight. Just because somebody can figure out something once they know the trick doesn't mean it's obvious.

After you know the secret to a magic trick, in hindsight, the trick always seems obvious.

In addition to raising challenges to validity, Huawei will also argue they don't infringe the claims. And here Huawei is simply wrong.

To demonstrate that Huawei is wrong, we will ask our experts in their presentation of evidence to you to go through

the patent claims element-by-element, line-by-line, and compare them to the standard so you can verify the claims do, in fact, cover the standard and are essential to it.

Now, at this point, you may be wondering if the common blueprint for every 4G phone infringes these patents, what about the rest of the 4G phone makers, right? What about Samsung? What about HTC, ZTE, Kyocera, the companies you see in the store who compete with Huawei and sell 4G cell phones? I mean, they sell phones using the same blueprint. How have they dealt with these patents?

Well, the answer is, each one of these companies has agreed to license these patents from PanOptis. A license, as you recall, is permission to use a patent. And if a company doesn't infringe the patent or if the patent is invalid, if it's not trespassing, it doesn't need a license.

Samsung, HTC, ZTE, and Kyocera have obtained licenses from PanOptis for the essential patents in this case and the rest of PanOptis's worldwide patent portfolio that is essential. And to obtain that permission, they have paid in the aggregate over $100 million.

But this begs a further question. If these patents are essential and infringed, if Huawei has stipulated it uses the standard, if multiple patent examiners have found these inventions to be valid and patentable, and if Huawei's competitors have all licensed these patents, why is Huawei the

odd man out here? And why are they contesting this in this court? Why hasn't Huawei just taken a license like all the others?

And the answer to that question is, Huawei requested a license from PanOptis, but it wasn't willing to pay fair value.

In June of this year, Huawei sent a letter to PanOptis with an offer to license the radio connection patents. And for the video compression patent, the H.264 patent, Huawei went a step further and offered to buy that patent outright, mere hours after PanOptis presented Huawei with its technical analysis showing Huawei infringes.

But the problem is Huawei wanted a special deal, and that kept the deal from getting done. They wanted to pay less than everyone else.

So the details, Huawei demanded a royalty rate that was a fraction of the rate requested by PanOptis. And for that fractional rate, Huawei demanded not just a license to the patent-in-suit -- patents-in-suit, but all the PanOptis essential patents worldwide, covering over 30 countries.

These are the financial terms that Huawei proposed. It's Plaintiffs' Exhibit 2313, and you will see it during the presentation of evidence. Huawei presented its offer as a worldwide single package deal with rates divided into regions. Not only did Huawei insist on paying a small fraction of PanOptis's royalty rates for the United States, it insisted, as

part of the package, on an extremely low rate in China.

Now, over 60 percent of Huawei's sales are in China, and they offered 0.04 percent for those sales.

So when Huawei sells a $100.00 phone in China, it would pay a four-cent royalty for a license under all these patents. That's what they demanded.

Now, ladies of the jury, PanOptis is committed to the industry that it will license its patents on fair, reasonable, and non-discriminatory terms. But fairness is a two-way street. And Huawei's offer wasn't fair to PanOptis, and it wasn't fair to all the other companies who have licensed from PanOptis and didn't pay rates nearly that low.

Huawei's conduct also shows that Huawei is willfully infringing these patents. And willful infringement is worse than regular infringement.

That Huawei tried to license or buy these patents, albeit very cheaply, shows they know these patents are valid, and they know they infringe them. And that shouldn't be surprising. Why would anybody buy an invalid patent?

But until Huawei has a signed license from PanOptis, it doesn't have permission to use PanOptis's inventions in its phones. And the fact that Huawei keeps importing and selling its phones in the United States without permission knowing it needs a license is willful patent infringement. Any license must be on mutually agreeable terms, not what Huawei dictates

it should pay.

And that brings me finally to the issue of damages.

The Patent Act provides that the remedy for infringement is a reasonable royalty. And PanOptis is requesting you award it a reasonable royalty to compensate it for Huawei's infringement. The -- the reasonable royalty for the radio patents is $1.10 per phone for all four patents combined. And a reasonable royalty for the video compression patent that allows more efficient delivery of video is $2.70 per phone.

How did we determine those reasonable royalty amounts? Well, first, our technical experts estimated the bandwidth savings, the -- the efficiency increases in bandwidth due to each patent. And you'll see this slide -- I won't go through it in detail now -- during the presentation of evidence, it will be explained to you. But each patent contributes to the overall efficiency of the phone.

Then PanOptis retained an economist, Dr. Michael Akemann, who calculated the financial value of bandwidth savings provided by PanOptis's patents.

And he estimated it in two ways. First, he did a market approach. And basically the market price for which cellular carriers sell bandwidth to other companies and to us as consumers. And then, secondly, as a cross-check, Dr. Akemann looked at the equipment cost savings to carriers by

not having less efficient phones on their network because those phones can practice the PanOptis invention. And there's an efficiency gain so carriers have to spend less on equipment.

Dr. Akemann calculated that the efficiency gains from the radio patents alone, the four radio patents, work out to over $16.00 a phone. And, therefore, add $16.00 to the value of Huawei's phones. And the efficiency gains from the video compression patent add nearly $6.00 to the value of a Huawei phone based on market approach.

The royalty PanOptis seeks is a small fraction of the value of these patents inferred upon Huawei and compare this with Huawei's offer of less than a dime. And you can see how unreasonable their offer was.

When the per phone royalties are multiplied by the number of infringing sales Huawei has made during the time period relevant to this case, the damages are approximately $10.6 million. This is the royalty Huawei should have paid for a United States license to the five patents in this suit, and we will ask you to award that amount as royalty damages.

Members of the jury, on behalf of PanOptis, our client, and our legal team, we thank you very much for your service. And we look forward to presenting our case to you.

THE COURT: All right. The Defendants may now present their opening statement to the jury.

Mr. Haslam, would you like a warning?

MR. HASLAM: Five minutes, please.

THE COURT: All right. You may proceed when you're ready.

MR. HASLAM: I want to start sort of where Mr. Stevenson ended up. He said something at the very end there that negotiations are all about reaching mutually agreeable terms. And what he said was, well, what Huawei offered was unreasonable, but the sole basis on which he says that is, is because PanOptis didn't want to take it.

What Huawei did is not willful infringement. They are entitled to a license. PanOptis is obligated to offer a license if by declaring their patents essential to the standard.

So what Huawei has done is what any commercially reasonable company would do, they sat down and talked with Huawei (sic). And those discussions have gone on a long time. But let me go back and just shortly summarize how they began.

PanOptis came to Huawei and said it had over 3,000 patents. It said they had over 300 standard essential patents, not just to LTE and H.264, they said they had patents to WiFi, things you may have in your home, and other technologies, and they asked for a bundle of money.

So Huawei said, okay, we'll talk to you. And Huawei did that in part because, yes, Huawei, like the other cell phone manufacturers, makes phones that can operate on an LTE

network. And, yes, there are patents that may be essential to those standards. So it said I'll talk to you about this.

But Huawei did so knowing that in that portfolio of patents were probably some junk, some that weren't infringed. And some, yes, notwithstanding the burden that people have when they go to court, judges and juries invalidate patents, because as the patent video said, sometimes mistakes are made. No process is perfect.

And the patent process takes place in secret. Samsung, Apple, Huawei, any other company who might ultimately be interested in these patents and whether they are, in fact, valid or not doesn't get to participate. It's just them and the Patent Office.

So you're going to see prior art today, this week, which the Patent Office never had a chance to look at.

Now, because these are standard essential patents and because it is easy to say they're standard essential and not always easy to prove it, there are companies which actually look at and study patents that are declared essential. And you're going to see some of these studies.

But one of them looked at 4,304 patents to companies like PanOptis, and Huawei has its patents, and they think some of them are standard essential, but what this company found was, is when they looked at 4,300 patents they -- that were declared essential, about 34 percent of them were actually

essential. 34 percent. If we applied that to a PanOptis patent, that would be about 1.3 of their patents might actually be essential.

So Huawei sat down to negotiate with those kinds of facts in its possession. And thought, okay, there -- there may be some patents in here that we need, and there may be a lot of junk in here.

But what took so long to get to here? Well, they started off with a bunch of different technologies, not just LTE and not just video compression. So it took time, ultimately, to discuss those other things until they got down to talking about the LTE and -- and video compression patents.

And something that Mr. Stevenson said, they wanted to license on a global basis. We don't want a license just the U.S. patents. We don't want to license just the Chinese patents. We don't want to license just the European patents. You either take it all, or you take none.

And that's not necessarily unreasonable, because Huawei, when they go out to license their patents, prefers to do the same thing. Can you imagine with over 3,000 patents, if you sat down patent-by-patent to talk about them, we wouldn't be here today, we'd still be talking about probably Patent No. 1,500 on their list.

So they negotiated. But one thing that Mr. Stevenson said, that they didn't want to take a license to these patents,

PanOptis would not offer Huawei a license to these five patents. You take it worldwide, or you take nothing at all.

And so that's the scope of what the parties have been negotiating about. And I believe that is commercially reasonable behavior. It is not willful infringement.

Huawei has never said it will not pay what it believes is a fair price for patents that it actually uses or for a portfolio that may contain patents that it uses. So it's not willful infringement.

Now, I didn't introduce myself at the beginning, but I'm going to take the liberties that the Court did and Mr. Smith did and Mr. Baxter did. I'm married. I have four adult children. I live in San Mateo, California. I graduated college in 1968 and went to California in the Air Force. Spent four and a half years there and decided to stay because I didn't like snow in the winter. So California I am, but I'm happy to be here in Marshall.

Now, let me tell you a little bit about my client, Huawei. It is, as was said, one of the largest telecommunications equipment manufacturers in the world. It makes the cell towers and equipment that runs the networks, and it supplies, for example, its equipment to British Telecom, the largest telecommunications equipment -- largest network in -- in Great Britain.

It also makes cell phones and -- and tablets, which

are the subject of this case, which it imports into the United States. Most of those phones are made in China, sold all over the world. And was indicated, about only 1 percent of Huawei's sales of cell phones and tablets is in the United States.

Now, you're going to hear from Mr. Emil Zhang who has been involved in the last year or so with the negotiations with PanOptis, and he'll talk to you about the history of those negotiations and what's gone on in the last year. He'll also talk to you a little bit about the company and the two Defendants in this case, one of which you heard is located in China. The other is a subsidiary in the United States.

Now, I can't, in the time I have, just as Mr. Stevenson couldn't, go into the real details of the patents, but I am going to try to give you what I believe is an overview of what we believe is at least one critical flaw with the -- the case that PanOptis is going to put on.

Now, remember, for infringement, they have to prove the presence of every single element of the claim in our parts. Our burden on non-infringement is to show that they can't meet their burden on just one limitation in the claim -- one requirement in the claim. If it's not there, there's no infringement.

And let me put up here a -- just something that will give you a -- a snapshot of what we -- what I'm going to talk about -- what I think is at least one principle flaw with the

arguments that you're going to hear this week from PanOptis and its experts.

I'm going to go through briefly on this, but I just wanted to say for the '216, the '284, we don't believe that when you look at the standard and you look at the patent, you won't find the patent in the standard. This is one of those 34 percent -- 66 percent that aren't in the standard.

The '238, we also think, you won't find in the H.264 standard, but if you think they can stretch the claim to cover that standard, we think the patent is invalid.

And on the '569 and the '293, we think they're not valid.

So let me talk briefly about something about each of the patents.

The '216 patent, I'm going to call this the shuffle patent. This is a patent that essentially says I'm going to code certain information and then send it to the other side. And so what it does is it starts with a deck -- if I can use a deck of cards -- it shuffles the deck once, and then it uses that deck to play or to send to the other side in the order in which they were just shuffled.

What you're going to hear from the experts and what you're going to see in the standard is that PanOptis ignores the fact that after you take the deck and you shuffle it once, you don't then play with it or send it to the other side. You shuffle it again. And when you shuffle it again, you do not

meet the requirements of the claim.

I came off without my clicker.

Here on the '2 -- '216 patent, it says -- this is the limitation -- the ordering vector defining an order in which bits -- my cards in my example -- forming the reordered mother code word are to be modulated and forwarded to a receiver.

And what their expert is going to tell you is the bits or cards that he identifies are the cards that are shuffled once. And in the claim, that has to be the order in which they're sent. But he ignores the fact -- ignores the fact that they're shuffled again. And if they're shuffled again, they won't meet this claim limitation, because the order of bits that he points to, the deck of cards he points to is not the deck that's ultimately used to play the game or to send the bits across to the other side.

And in particular, he talks about the -- at the top of this diagram, DDX-01-04, he talks about these d's up here, which is one -- the card deck and the e's that come out of the top left rate matching box. That's what he says, these e's is the deck of cards we're going to play with. He does not talk about what happens down here in the channel interleaver.

So I want you to listen to the testimony that you hear from Dr. Bims, our expert, about what happens in the channel interleaver.

Now, I want to talk about the '284 patent. The '284

patent is -- is what I like to call -- it's two things in one envelope. This is one of those control patents that Mr. Stevenson talked about where -- where you try to save space by putting two different values in one package. But the two different values, the claim requires, have certain features they have to meet.

First of all, there have -- the values have to be in two subsets, one subset of values and another subset of values. And the claim requires that the first subset have more in it, more values in it than the other subset.

So it's really just a question of counting which subset has more than the other.

I put up here on DDX-01-06, this is the table that's in the standard. And on the left-hand side, I put the index, and that's the kind of information that would come from the cell tower to the cell phone. And in that message, that index, it tells you to point to a table to get two values, the TBS index, which you'll hear about is a transport format, or TF. You'll probably hear a lot of references to TF.

And on the right-hand side, in red, you'll see something called redundancy version, or RV. And at this point, you don't really need to understand what those values indicate, because what the claim is that they're trying to read on this says that the number of values in the TBS set is greater, is more than the number of values in the redundancy version set.

And you can look at that yourself and you can see that there are 32 values in the red and 29 values in the TBS. And the claim requires just the reverse. It requires more values in the TBS, and you're going to see that, very plain, there's going to be no excuse about that. That's what the claim says. The first subset has more values than the second subset.

Now, there's another argument with this one. The claim uses the word "reversed for." And what the claim says is, is the first subset is reserved for the TBS or TF, and the second subset is reserved for the RV or redundancy version.

At the end of the day, we're going to ask you to apply your common sense and the common plain and ordinary meaning of reserved for, and look at this table where you see T -- the TBS index in yellow, you look in the right-hand column, you'll also see an RV value.

And at the top, you'll see what the standard says. The UE is the user equipment, the cell phone, uses this table to determine the redundancy version. So it means that every value in the redundancy version or red column is actually sent from the cell tower to the phone.

And if you've got two explicit values in the TBS index and the redundancy version, we're going to ask you does that meet the plain and ordinary meaning of the TBS index being reserved for the TBS index and the redundancy reserved for the redundancy version?

If you look at the bottom here you can see explicitly that the last three numbers have RV1, 2, and 3, and it says "reserved for" in the other columns. That's clearly reserved for the redundancy version. Is the -- is the TBS or TF reserved for itself? We don't believe so.

Now, let me talk about the let me talk about the '238 patent. This one I call, it's -- it's the coding of numbers, coding of a specific number.

You heard that the processing in the video is done in blocks. One of the steps in processing is when you generate these blocks after a bunch of processing, those blocks will have different numbers in them, 0's, 1, 4, 5, 10, 12, 13.

The '238 patent is simply about looking at those blocks and counting the numbers that are not zero, non-zero numbers, and using that number, sending a code from one phone to the base station or one phone to another that has a code that represents the number of non-zero numbers.

And here is -- I put on this slide, DDX-01-08, I put an example of a table, like the one claimed in the patent, and I put above it the Court's claim construction that they're going to give you, that he has given you and is in your binders. And what it says is a "variable length code table," which is what is at the bottom, you'll see VLC stands for variable length code.

And you'll see that each of those values is different.

Each code is unique, it's different from the other ones.

And if you read what I've highlighted in yellow here, you'll see each variable length code is unique. So each of the things under the VLC Table 1 are different, unique, and it goes on to say it maps to or represents one unique value of non-zero numbers.

And if you look at the left-hand side, you'll see that each coefficient number, they're called coefficients, but this would be the number of non-zero coefficients. So if you were going to send -- you wanted to say there were no non-zero coefficients, you would send code 0. If there was one, you would send 01, and likewise.

But notice in this table, that it maps to a unique value of the non-zero coefficients.

This is the table in the standard that they're saying their patent is just like. But we can see right off the bat it isn't. On the left-hand side, there's a column called TrailingOnes. So the table in the standard keeps two pieces of information. It sends two pieces of information, not just this number of non-zero coefficients.

It also keeps track of whether there's any -- what's called trailing 1's, and we don't need to get into what a trailing 1 is as opposed to a 1. It's essentially are there 1's in certain places. So it keeps track of both pieces of information.

But look at this table. For example, if you just look at number of non-zero coefficients, and the claim requires that the code map to a unique value, you have two -- you have three in the column of coefficients, three 2's. That's not unique. You have four 3's. That's not unique. What they will point to is the trailing 1's to try and make their case that it points to a unique values by taking two numbers, but they're looking at the trailing 1's, and that's not in the patent.

And why isn't it in the patent? Because what's in the standard, what I've shown you here on the table was invented by somebody else, a Dr. Bjontegaard. And Dr. Bjontegaard invented this table. He did it before the PanOptis patent. He filed a patent application on it before the PanOptis patent. He was a member of this committee that Mr. Stevenson talked about that came up with the H.264 standard. And his proposal was adopted as part of the standard. And that's why you have this table, not the one out of the patent in the standard.

And here's another interesting thing, you want to talk about the value of this patent -- they're going to ask for, I think, $7 million for this patent.

Dr. Bjontegaard, when he made his proposal to the standard body and said here's what I think is a better way to do it, what he said is, I have a patent on this or a patent application. But I'm willing to license this royalty-free if you adopt it. You can use it without paying anything.

What PanOptis is trying to do here is to take credit for somebody else's idea, somebody else's idea they were prepared to give away for nothing, and they want $7 million for it.

If we want to use their fence or deer license analogy, you can stop people from hunting deer on your property, but what they're trying to do now is move the fence to capture somebody else's property, something invented by somebody else, and we'll prove that to you.

Now I want to talk about the '569 patent. I call this patent packaging different things in different boxes in a particular way. That's what this patent is about. It's about taking certain different kinds of information and putting it in certain places in a signal so that you can send it from one side to the other.

Now, when the Patent Office first looked at these claims, what they said was we read your patent application, and we read your claims, but we don't see that what you've said in your claims is what you decide -- describe in your patent.

THE COURT: You have five minutes remaining.

MR. HASLAM: So what they -- what they -- what they said is, you can't get a patent.

And what they did is, they didn't point to anything in the patent other than these figures, and you're going to see these figures in the patent.

And this is supposed to be the guide -- guide post for how you put things in groups of symbols or symbols, and each box here is a symbol.

Well, you can look, there's -- you can do it any which way in here. You've got them going left to right, you've got them going top to bottom, you've got some of them that are 2 by 5. You've got one that's 1 by 30. You have some that are left, some up.

And so they claimed their invention so broadly that it does read on what cell phones did before. Whether there was an invention in there that they might have been able to get a patent on that might be valid is not what we're here for. They can't rewrite the claims now, which is what I think their experts will try to do to try to weave around the prior art.

But these are so broad as to where you package things in any of these areas, which is what the claim requires. The patent is invalid because these kinds of things were done before. So this is -- I think an example of greed is its own punishment. They tried to claim too much, and by doing that, they may have claimed something they thought was new, but they also claimed what was old.

Now, I'm just going to go quickly through this last patent. This is really just a scheduling patent. It basically says if I want to send something, I'm going to ask for permission to send it. I get something back that says: Okay,

you can send it. And then I send information that says: Here's what I have to send.

You're going to hear scheduling request, scheduling grant, buffer status report.

But the patent then says: Well, suppose while I've gotten that permission and I've told them what I have, something more important comes along, and I want to ask for more -- I want to ask for more so I can send more. And it says: Send another scheduling request. And it says that was different than what was done in the prior art.

And we're going to show you, as I've got up here on the patent, with a prior generation, the third generation, the one before 4G, WCDMA had a triggering event that said if more important information comes along, ask for more permission. And the Lohr patent, which was prior art, had the basic scheduling requests. And we believe it was obvious at the time to combine those two to come up with what they now claim is the '293.

Now, you've heard that PanOptis is obligated to license Huawei, and Huawei has a right to a license, and the parties haven't reached agreement. What you will see as the evidence unfolds is that Huawei has offered more money. PanOptis has requested less, but they haven't met in the middle.

But I wanted to spell this notion that somehow we've

done something wrong by not taking a license to these five patents, and I want to remind you, they won't license us these five patents. Even if we thought they were valid and infringed, they say you've got to take the whole thing, a worldwide license. And I'm not saying it's unreasonable because Huawei does the same thing. It's more efficient. But -- but it does sort of strike me odd that they will stand up here and say: Well, we haven't paid them for these five patents. They won't let us pay them for the five patents. We've got to come to a deal on a whole big swath of patents before we can do a deal on these five.

Now, there is, I believe, based on what we've said here, that there will be no damages award, but I do want to say that their expert did calculate what he called was a fair, reasonable, and non-discriminatory royalty, a FRAND royalty. And you've heard that that's what these patents are encumbered with. You have to make a fair, reasonable, and non-discriminatory. Their expert has come up with a value for five LTE patents of about $480,000.00. He tried to upcharge it with all these alleged benefits. Listen to the evidence when you hear what's behind their arguments on whether these benefits really exist.

THE COURT: Counsel, your time has expired.

MR. HASLAM: Thank you.

THE COURT: All right. Ladies and gentlemen, you've

heard opening statements from both sides.

Let me ask, counsel, does either side wish to invoke the rule?

MR. STEVENSON: Yes, Your Honor. May we approach briefly?

THE COURT: Approach the bench.

(Bench conference.)

MR. STEVENSON: Yes, Your Honor. PanOptis wishes to invoke the rule for percipient witnesses, excluding experts.

And with the approval of the Court, there is one additional agreement that counsel have reached regarding Eric Tautfest who is not on either side's live witness list. There is some video deposition of him. He's outside counsel for PanOptis. But it has been indicated to me it won't be played, and I wanted to inform the Court that counsel has agreed Mr. Tautfest can be exempt from the rule.

THE COURT: Is that correct?

MR. YOUNG: Actually we -- we may play some video of his. I think that's -- but he's not going to testify live. So whatever he hears won't affect anything that he says.

THE COURT: Does that mean you don't have any objection to him being present --

MR. YOUNG: Correct.

THE COURT: -- during the trial?

MR. YOUNG: Correct.

MR. STEVENSON: Sorry if I misspoke.

THE COURT: So both sides agree that Mr. Tautfest will be excluded from the rule and expert witnesses will be excluded. Otherwise, the rule will apply.

MR. STEVENSON: Correct.

THE COURT: All right. Take your seats.

(Bench conference concluded.)

THE COURT: All right. For the record, the rule has been invoked on the following basis: Expert witnesses are excluded from the rule.

And by agreement of the parties, Mr. Tautfest is excluded from the rule.

All other witnesses, including all fact witnesses, are covered by the rule, which means if you anticipate being called as a witness in this case and you are not an expert witness or the one individual the Court's identified, then you should remain outside the courtroom until such time as you're called to testify.

For the record, the rule has been invoked on that basis.

Ladies and gentlemen, before we -- I'm sorry, I did it again. Ladies of the jury, before we proceed with the Plaintiff calling their first witness, we're going to take a short recess. This is one of those times when you can simply close and leave your notebooks in your chairs. I'm going to

remind you to follow all the instructions I've given you, including, of course, not to discuss the case among yourselves or with anyone. And we'll be back in here shortly to have the witness call their -- Plaintiffs, rather, call their first witness. The jury is excused for recess at this time.

COURT SECURITY OFFICER: All rise for the jury.

(Jury out.)

THE COURT: Be seated, please.

I want to get a couple of ground rules straight with counsel before we proceed any further.

Typically, in this court, we have long followed what's commonly called the arm's length rule, which means as long as you're within an arm's length of the podium, you're in the proper place at the bar when you're addressing the jury or the Court.

Mr. Haslam, you got pretty close to getting beyond the arm's length here, and I -- you, obviously, are a lawyer that likes to walk around when you talk, and that's perfectly fine, but I'm going to require that you stay within an arm's length.

The other thing is as you move that microphone back and forth, when you get close to it, it's very loud and then you step back four feet and it's very soft. That's on you. If you want to be heard, if you want to be effective, that's on you. But you need to be mindful of the audio system in this courtroom.

Also, if anything is going to be presented to the jury by way of a visual, either on the screens or the document camera, that is fine. If anybody, though, is going to use charts, easels, and move mechanical things around the courtroom, I want to know about it before it happens and not see it happen in real-time. I want to know where you're going to put it. I want to know how big it's going to be. I want to know about it in advance and not find out about it when it's happening.

So if you're going to display something to the jury or the Court, if it's on the screen through the IT system or if it's on the document camera, nothing in advance is necessary. If you're going to use an easel or chart or a graph or a board, something physical, you need to clear that with me before you present it to the jury.

All right. And Plaintiffs did not object, so it's water under the bridge at this point, but that may have been one of the more argumentative opening statements I've heard from the Defendant, just for future reference. It is opening statement. It is not opening argument. But that's for future reference.

Are there any questions before we take a recess?

MR. SMITH: Your Honor, one question. Out of an abundance of caution, I think I previously identified Mr. Zhang as our corporate representative. I understand that he's

exempted from the rule, but I wanted to check that with the Court.

THE COURT: Absolutely. The rule does not cover corporate representatives.

MR. SMITH: Thank you, Your Honor.

MR. BAXTER: Nothing from us.

MR. BURGESS: One thing, Your Honor.

MR. BAXTER: Except for this one thing.

MR. BURGESS: In regard to using the easel, I was going to use it with our second witness, and I don't know how you would prefer us to clear that with you in advance. Is now okay or either before the witness comes up or in the morning?

THE COURT: Well, before we get out here with the jury in the box at some opportune time. I'll let you pick the opportune time. If -- if you're intending to use the easel with the Plaintiffs' second witness, then tell me what you have in mind.

MR. BURGESS: Okay. Well, I -- I would put the easel ideally on the other side of the podium, and it's just going to be the claims -- each of the two claims with the check boxes.

THE COURT: Well, one of the reasons I like to clear this in advance, I don't want the -- I don't want the easel and the board and whatever you're using to interfere with opposing counsel's opportunity to see what you're presenting to the jury.

Now, in the case of the easel or board, if it -- if it's where -- and it's usually the Defendants that can't see it because of the way the courtroom is laid out. Defense counsel and where it's appropriate, Plaintiffs' counsel, you have leave, whoever is going to respond to that witness -- whether it's on direct or cross, you have leave to -- that -- that lawyer has leave to position themselves where they can see what their opposing counsel is doing with the board or the easel while it's being done.

And typically, in this courtroom, the best place is between the far end of the jury box and the first pew on the right side of the courtroom. The way this courtroom is laid out, there is an alcove, for lack of a better word there that defense counsel can discreetly slip over to and see what Plaintiffs' counsel is using the board or the chart or the easel with and not be put at a disadvantage.

I don't know what's going to go on the easel. I don't know how big the print is, and I don't know how close you need to get it to the jury so that it can be seen. I typically prefer the easel to be on this side of the podium. It can be forward of where it is. I don't want it directly in front of the podium where the board blocks counsel from the jury. I have seen it used on the other side of the podium effectively. I just want to make sure that if you're using it, defense counsel knows they have leave to step around so they can see

what's being done and not be behind the board and be blocked out.

MR. BURGESS: We have absolutely no issue with that, Your Honor.

THE COURT: Okay. Also, there is a standing rule -- let's just get this clear. If you're using the board, if you're using an easel, if you're using the document camera, or you're presenting something on the screens, when you finish, whatever you're using comes down. You don't leave it up so that it sits there five minutes while the other side begins their turn at the podium and doesn't realize that the jury is still looking at the other side's demonstrative or board. So you need to take down what you put up before you pass -- as a part of passing the witness.

Questions?

MR. HASLAM: No questions, Your Honor. I understand the Court's comments.

I apologize. Mr. Smith did tell me about the arm's-length rule, and I thought my arms must have been longer than they really were. It won't happen again.

THE COURT: Well, you may have stretched them a little bit, but I think we understand each other.

MR. HASLAM: Yes, sir.

THE COURT: All right. The Court stands in recess.

COURT SECURITY OFFICER: All rise.

(Recess.)

(Jury out.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

Counsel, is there anything we need to take up before I bring the jury in and proceed to have Plaintiff call their first witness?

MR. BAXTER: Nothing other than during a portion of the witness testimony we'll have to seal the courtroom.

THE COURT: All right.

MR. BAXTER: I'll try to consolidate it all together so we do it just once.

THE COURT: Well, I appreciate both side's efforts to minimize the number of disruptive sealings and unsealings, but I understand it's necessary from time to time. So I'll trust both sides just to do it as needed.

MR. BAXTER: Thank you, Your Honor.

THE COURT: Anything further?

MR. BURGESS: Your Honor, I'm sorry, just one -- one small point of follow-up.

During the recess, I conferred with Defense counsel about the whiteboard, if I could use it with my witness. And what it's going to be, just to be clear, is just two claims with the elements, and I'm just going to check them off as we go.

And -- and they're okay if I put it sort of behind the podium and to the left. And with Your Honor's leave, I'd like to move it before the jury gets back in, or if you prefer me to leave it here, I can leave it as well.

THE COURT: This is for the second witness on the Plaintiff's side?

MR. BURGESS: After we play the video, so, yes.

THE COURT: Second live witness.

All right. I think probably the simplest thing is to leave it where it is. And then after the second video deposition, immediately go up and move it, and then I'll ask the Plaintiff to call their second witness. We're going to have to swear the witness in anyway, that should give you time to get it positioned.

MR. BURGESS: Thank you, sir.

THE COURT: Anything further?

MR. BAXTER: No, Your Honor.

THE COURT: If not, let's bring in the jury.

COURT SECURITY OFFICER: All rise for the jury.

(Jury in.)

THE COURT: Please be seated.

Plaintiffs, call your first witness.

MR. BAXTER: We call Mr. Ray Warren, Your Honor, our company representative.

THE COURT: Mr. Warren, if you'll come forwards and be

sworn by our courtroom deputy? If you'll be sworn first, and then you can have a seat on the witness stand.

(Witness sworn.)

THE COURT: All right. Sir, now, if you'll come around and have a seat on the witness stand.

All right. Counsel, you may proceed.

MR. BAXTER: Thank you, Your Honor.

RAYMOND WARREN, PLAINTIFFS' WITNESS, SWORN

DIRECT EXAMINATION

BY MR. BAXTER:

Q. Would you state your name for the jury please, sir?

A. My name is Raymond Warren.

Q. And where do you live, Mr. Warren?

A. I live in McKinney, Texas.

Q. All right, sir. Are you a family man?

A. Yes, sir.

Q. Tell me about that.

A. Married to my wife Mary for 38 years.

Q. And what does Ms. Warren do?

A. She's a recently retired school teacher, did 8th grade science.

Q. All right, sir.

A. I have two grown boys, one 33 years old who is an account executive at an interior medical design location, and a son that's 30 years old that's a civil engineer in Florida.

Q. All right, sir. Who do you work for, Mr. Warren?
A. I'm employed by Marconi to do work for PanOptis.
Q. Okay. I'm going to come back to that in just a moment.
But tell the jury, first of all, what your educational experience and your work history is, please, Mr. Warren.
A. Well, I've got a Bachelor of Science in electrical engineering from the University of Oklahoma.
After that, I got a law degree from University of Oklahoma.
And then later on in my career, I got an MBA from Arizona State University.
Q. And upon leaving law school, did you find employment?
A. Yes, sir, I did.
Q. Did you practice law?
A. Yes, sir.
Q. Who for?
A. For Motorola.
Q. What did you do for Motorola, and where were you located?
A. Originally, I was located in Arizona. Phoenix, Arizona area. And I did mostly patent preparation and prosecution work.
Q. Okay. Now, we heard the word "prosecution" from Judge Gilstrap today when he was giving instructions to the jury. As an old prosecutor it always sounds like a prosecution criminal word. What does it really mean?

A. It is an unusual term for that situation, but it's the -- as the judge described, it was the communications back and forth with the Patent Office to try to get a patent granted.
Q. And is there a process involved in that? I think we heard today that it was all secret, but how does that really work?
A. Well, when an inventor comes up with an invention that he would meet -- in the case of Motorola, he would meet with the attorney, we would write the patent application to describe his -- his invention. We would then file that application with the U.S. Patent Office. The Patent Office would in turn assign that to an art unit which would eventually --
Q. What -- what is an art unit?
A. An art unit is a group within the Patent Office that is a specific technical group. So all the patents in that technical area would go to that art unit.
Q. So if it's about cell phones, it might go to a particular group of patent examiners?
A. Yes, sir.
Q. All right, sir. Go ahead.
A. They would then examine the application. They would then see if it meets all the criteria where all the administrative parts of it are completed correctly. They would look for prior art and consider the prior art.
Q. And I know Judge -- Judge Gilstrap told the jury about prior art today, but what is that?

A. Prior art would be technical documents, other technical information in the same area.
Q. Not a painting?
A. No, sir.
Q. Not even a sculpture?
A. No, sir.
Q. It's just publications?
A. Yes, sir.
Q. All right. And the Patent Office has its own database of those?
A. They do, yes, sir.
Q. And they look at their own patents, and they look at other publications?
A. They look at patents. They look at -- they have access to a great deal of -- of publications.
Q. Then what happens?
A. Then they would -- usually what happens is they write back saying they're going to decline your application at this time. They would give you the reasons why they're not going to allow your application.
Q. And what do you then, fold up your tent and go to the house?
A. No, sir. You consider what they said. You meet with the inventors. You prepare a response. You might amend your application or you may just respond with written arguments

trying to explain to the examiner why his original position was not accurate.

Q. And what does the examiner do then?

A. Well, the examiner will reconsider it. He'll look at your -- your arguments and your position, and -- and then he can respond again or he might allow it. And that can go back and forth quite a bit.

Q. Do most patent applications get rejected, in your experience?

A. Very rarely are they not rejected.

Q. Okay. Some get through, some don't?

A. Yes, sir.

Q. But the Patent Office does a pretty good job on getting good ones and bad ones?

A. The Patent Office does a very good job, I think.

Q. All right, sir. Now, you prepared patent documents for a while. Did you keep doing that all your years at Motorola?

A. No, sir.

Q. What did you do next?

A. Eventually, I moved more into management positions and began doing more licensing activity.

Q. Tell the jury what a license is.

A. A license is a contract with someone that is using your patent or wants to use your patent where you give them permission to do that.

Q. I talked about a deer lease this morning because that's kind of what I'm familiar with. Is a license sort of the same thing?
A. It is because you may give a license to your patent to a number of different companies that want to use it. It's not just one license.
Q. So like a deer lease, there may be five hunters that pay to come on the property and hunt at various times?
A. Yes, sir.
Q. Okay. Now, did you keep doing that at Motorola?
A. Yes, sir.
Q. How long did you do that?
A. I did that from around the mid-'90s until around 2013.
Q. Now, I know, Mr. Warren, you told the jury you had a BS and EE. Did you practice that?
A. No, sir, I did not.
Q. Did you just practice law?
A. Yes, sir.
Q. Okay. And when did you finish up doing that at Motorola? What happened?
A. Motorola was purchased by Google. And during that time, I still worked for Motorola. Then Motorola was sold to Lenovo. And at that time, Google was keeping the patents and moved me into work for Google.
Q. And where was that?

A. That was in the Chicago area.
Q. How long did you work for Google?
A. A couple of years.
Q. Was that a different slice of life?
A. Yes, sir, very different.
Q. Okay. And you did it for a couple of years, and then what did you do?
A. And then it was best to look for something else. So I started working for Marconi and PanOptis.
Q. Okay. And that's your present employer?
A. Yes, sir.
MR. BAXTER: Can I see Slide No. 1, please, Mr. Moreno?
Q. (By Mr. Baxter) They are -- this slide showed us -- shows us who you actually work for, who writes your paycheck, right?
A. Marconi, yes, sir.
Q. What are the other two entities?
A. The PanOptis Patent Management is an entity that has the rights to license certain patent portfolios that are owned by affiliated companies, and two of those affiliated companies are listed below there, the Optis Wireless Technology and Optis Cellular Technology.
Q. And what do you do for those two companies?
A. I license their patent portfolios.
Q. All right. And if I were smart enough to erase something

on this screen, how would I do that?

MR. BURGESS: In the upper right corner.

MR. BAXTER: Upper right corner? Thank you.

Q. (By Mr. Baxter) As you can tell, Mr. Warren, from having visited with me, technology is not exactly my strong suit, is it?

A. No, sir.

MR. BAXTER: Let me see the next slide if you would, please?

Q. (By Mr. Baxter) Tell me who PanOptis is.

A. Well, PanOptis -- Marconi -- Marconi and PanOptis is a group of people that are involved in licensing patent portfolios. And as a company, we have all of the same type of functions that any company would have. We have licensing executives. We have engineers. We have human resources. We've got accounting. We've got general legal department. So all variety of your typical small to medium size firm or company divisions.

Q. About how many employees you got? Are these some of them on the screen up here to the left?

A. Yes, sir, that's some -- the top there is the Marconi offices. And the bottom is the PanOptis offices. They're different offices. It's not the same.

Q. Do you have technical people that sometimes help you with licensing?

A. Yes, sir.
Q. And what do they do?
A. Well, they will help us explain the patents or the claim charts to potential licensees. They will respond to comments or -- or positions raised by those potential licensees with regard to the patents, at least technical positions.
Q. Well, why do companies come to PanOptis? What -- what is it you do that gives them some help?
A. We're able to consolidate patent portfolios, bring them together, and then go out and be able to license these as a group rather than license them individually by different companies.
Q. Have you specialized so far in telecommunications?
A. Yes, sir.
Q. About how many patents does Marconi or PanOptis have?
A. The PanOptis portfolio is roughly 5,500 to 6,000 patents -- individual patents.
Q. And are those grouped into families somehow?
A. There's portfolios, and within the portfolios, there are patent families.
Q. Tell me what a patent family is.
A. A patent family consists of the original patent and then any patents related to that that are filed around the world.
Q. Well, what do you do to manage those patents, Mr. Warren?
A. Well, some of them have pending applications. We have to

manage the pending applications and try to get patents granted on those in various countries around the world. We have to maintain the existing granted patents. There's often fees that are due throughout the lifetime of a patent that you pay in order to keep it alive.

Q. And do you do that?

A. Yes, sir.

Q. Okay. Tell me what technology companies PanOptis has worked with, if you would, please.

A. We've worked with --

MR. BAXTER: Let me see the next slide if you would, please, Mr. Moreno. Thank you.

A. We've worked with Ericsson, Panasonic, and LG.

Q. (By Mr. Baxter) Did you get patents from each of these three?

A. Yes, sir.

Q. All right, sir. Tell us a little bit who Ericsson is.

A. Ericsson is a leading telecommunications manufacturer. They've been involved in telecommunications for a very long time and with cellular communications since the very beginning. They put a lot of and are one of the leading companies in research and development into helping design and develop new standards -- new cellular standards.

Q. And do they deal primarily with base stations or the equipment that gets the signal processed, as opposed to

handsets?
A. Yes, sir. These days, they deal mostly with the network equipment.
Q. What about Panasonic, who are they?
A. Panasonic is a Japanese company, also very significant in the standards development process. They were a large company in Japan that makes handsets.
Q. And what about LG, who are they?
A. LG is a Korean company, one of the top two big companies in Korea that makes handsets. They've also been very involved in research and development in helping design these standards.
Q. Well, how has your company worked with these three technology giants?
A. Well, Ericsson and -- originally, Ericsson and LG were forming a patent portfolio where they were going to sell off part of their patents and put them together and make one portfolio and were looking for someone to purchase that portfolio and be able to go out and license those patents.
Q. And did -- did that involve you?
A. Yes, sir. We were the ones that ended up purchasing that portfolio.
Q. Do you know about how much money you paid for that -- those patents?
A. Yes, sir. That -- that portfolio was around $70 million, and then there's the possibility of -- of later revenue

sharing.
Q. All right. So there's a possibility that if, in fact, you license the patents, that some of the money will flow back to the parent companies?
A. Yes, sir.
Q. All right, sir. Well, tell me why we're here, Mr. Warren. We've got a bunch of folk -- bunch of lawyers, and now we've got eight folks in the box that are surprised to be here. Why -- why are we here?
A. Well, we've been trying to negotiate a license for some time with Huawei and have not been able to conclude one.
Q. Well, have you -- we're here only on five patents, right?
A. Yes, sir.
Q. Is that how you started the conversation with Huawei?
A. No, sir.
Q. What was the original conversation with Huawei? Was it about the five?
A. No, sir. Originally, it was -- we were -- had contacted them to let them know that at first we had the original portfolio that we had purchased, the Optis Cellular portfolio. And then shortly after that, we had acquired the -- what we call the Optis Wireless portfolio, that was the -- the Panasonic/Ericsson set of patents, and we informed them of that set of patents, as well.
Q. Right. Now, I heard Mr. Stevenson say that there was no

question that the Huawei phones use our patented invention in his opening statement?

MR. BAXTER: Can I see Slide 4?

Q. (By Mr. Baxter) Do you know what this is, Mr. Warren?

A. Yes, sir. This --

Q. Is this a portion of legal pleadings that Huawei has filed in this case?

A. Yes, sir, it is.

Q. Can you read that to the jury, please?

A. Yes, sir. It says: Huawei Device USA admits that it has offered for sale and/or sold the accused Huawei products in the United States and that the accused Huawei products interoperate with LTE-based telecommunications systems and/or can decode picture and audio data.

Q. Okay. Is that an admission that they import these phones and sell them in the United States and that they're meeting the LTE standard and the video standard?

A. Yes, sir.

Q. All right, sir. You -- you ever seen a Huawei phone?

A. Yes, sir.

Q. When was the last time you saw one?

A. Yesterday.

Q. Where?

A. In the offices.

Q. Okay. Over at the Baxter building?

A. Yes, sir.
Q. Okay. Where did you get it?
A. We actually had acquired it last -- earlier in the week, early last week from the Walmart here in Marshall.
Q. All right, sir. So they're selling the Huawei phones right here in Marshall?
A. Yes, sir.
Q. All right, sir. Now, the patents --
MR. BAXTER: If I can see Slide 5.
Q. (By Mr. Baxter) Are these the patents that are at issue in this case?
A. Yes, sir.
MR. BAXTER: And, Your Honor, if I can approach the witness for just a moment, and I don't want to really mark these as -- as exhibits because they're the originals, but can I pass these patents up to the witness?
THE COURT: You can approach the witness.
MR. BAXTER: Thank you, Your Honor.
Q. (By Mr. Baxter) Mr. Warren, take that very first one, and tell me what it is, and then we're going to hold it up for the jury to see, if you don't mind.
A. Well, this is the patent that -- when they're originally granted, it's called a ribbon copy. It used to be this ribbon was tied through, but now it's just a stamp on it. This is, originally when I started, would have shown your ownership

because you had the ribbon copy. This was the original one to grant.
Q. Which one is that one, by the way?
A. This is the -- the '293 patent.
Q. All right, sir. Look at the next one.
A. This is another original, and this is the '216 patent.
Q. All right, sir. What's the next one?
A. These are a little different design.
Q. No ribbon?
A. No, it's got the stamp, but it doesn't have the -- the ribbon placed on it.
Q. All right. Which one is that?
A. This is the '238 patent.
Q. All right, sir. That's the video patent?
A. Yes, sir, that's right.
Q. All right. The next one?
A. The next one is the '284 patent. Same sort of -- whoops -- same sort of cover on that one.
Q. All right, sir. And the last one?
A. And the last one also has the newer cover, and it's the '569 patent.
Q. And -- and PanOptis owns all of those patents?
A. Yes, sir.
Q. All right, sir. Now, we've got a slide here that says the essential radio patents, and they're the listed, the '284, the

'569, the '293, and the '216.

Now, you're not going to talk about the technical aspects of those patents, are you?

A. No, sir. I know very basics, but we have technical experts that will be here to be able to talk to those in detail.

Q. But these are the patents that have been declared essential to the standard?

A. Yes, sir.

Q. And so that if you're going to practice the standard, you've got to practice these patents?

A. Yes, sir.

Q. All right. Now, the '238 is not in that section. Is that the video patent?

A. Yes, sir.

Q. Is it standard essential?

A. No, sir.

Q. You know why it's not?

A. It's got elements in it that in the claim that define what the patent is that fall outside of any standards.

Q. Now, I understood counsel for Huawei in his opening statement say that we had to license all of these patents to Huawei no matter what; is that true?

A. No, sir.

Q. All right. Let me talk about the '238. Do we ever have to license that to Huawei?

A. No, sir.
Q. Can we keep it for ourselves or just license it to people that we want to?
A. Yes, sir.
Q. And can never have to deal with Huawei on that patent; is that right?
A. Yes, sir.
Q. And if we don't, if they don't have it, then they can't practice that standard, can they?
A. Well, they could -- the '238 patent, they could still practice the standard. They just couldn't practice our patent.
Q. All right. And they couldn't do the video?
A. Correct.
Q. Because the video is in a different standard, is it not?
A. Yes, sir.
Q. What's that called?
A. H.264 or sometimes referred to as AVC.
Q. Okay. But it's not true that we ever have to give anybody, including them, a license to that patent, do we?
A. That's correct, sir.
Q. All right, sir. We're going to talk about the standard essential patents in just a moment. But do you know -- well, let me -- let me go to Slide 6, and ask you this way.

Do you know what a standard is, both based upon your license experience and on your electrical experience?

A. Yes, sir.
Q. Tell the jury what it is. Why do you have them?
A. Standard exists so that different equipment can be made by different manufacturers and still be sure that it's going to operate in the fashion that you expect it to operate.
Q. All right. Now, we put up on the screen what, at least as you've explained to me, is probably the most common standard in the United States. What is it?
A. It's an electrical outlet, it's probably the -- everybody's seen and had experience with these on a daily basis. What the standard means is you can buy any appliance in the United States that has a plug on it and know that it is going to plug into your outlet -- any outlet that you have in the U.S.
Q. And if you didn't have that, would it be possible for you to have your hairdryer when you go someplace, somebody else's house or a hotel, and try to plug it in and it just won't work?
A. It wouldn't work. You'd have to get an adapter or something else.
Q. Like going to Great Britain where they certainly won't work?
A. Yes, sir.
Q. All right.
MR. BAXTER: Next slide.
Q. (By Mr. Baxter) Now, we've talked about ETSI in both voir dire and the opening, tell the jury what ETSI is.

A. Well, ETSI is the -- it's an acronym, stands for European Telecommunications Standards Institute. And ETSI is the organization that forms the committees that are open to any company that wants to participate where they would bring in their experts and define the cellular standards in this case.
Q. And the SEP, tell the jury one more time what that stands for.
A. SEP, other acronym, stands for standard essential patent. And that refers to any patent that you would be required to use in order to produce a standards-compliant product.
MR. BAXTER: Next slide, if you would, Mr. Moreno.
Q. (By Mr. Baxter) FRAND. Now, when you first told me that earlier in the week I thought it was a lady's name. But what is it?
A. FRAND is the -- the acronym for fair, reasonable, and non-discriminatory. And that's the obligation that the ETSI standards group puts on patentholders to agree to license their technology.
Q. Now, the four cell patents that are in this case, because they're standard essential patents, does FRAND apply to them?
A. Yes, sir.
Q. Now, I think I heard Huawei's lawyer say to the jury a while ago that they've got to give us a license to those. Is that also true?
A. Yes, sir.

Q. Do we have to do it under their terms?
A. No, sir.
Q. Well, the -- the obligation is that the royalty be fair; right?
A. Yes, sir.
Q. And reasonable?
A. Yes, sir.
Q. And we can't just give it to some and not give it to others?
A. Correct. That's correct, sir.
Q. But does that mean just any old number will do? If they come in and offer us a penny for a patent and say, well, that's FRAND, you got to give it to us; is that true?
A. No, sir.
Q. Is there a negotiation even among big companies about what a FRAND rate is?
A. Yes, sir.
Q. And have you been --
THE COURT: Just a minute.
MR. YOUNG: Objection, leading, Your Honor.
THE COURT: Sustained as to leading.
Avoid leading, counsel.
MR. BAXTER: Thank you, Your Honor.
THE COURT: Let's proceed.
Q. (By Mr. Baxter) Do you, in fact, or have you negotiated

with all kinds of companies about the FRAND rate?
A. Yes, sir.
Q. All right. How do those negotiations go generally, Mr. Warren?
A. Well, generally, we will first reach out to notify the company that we have a set of patents that they should be interested in taking a license to. Once they respond, we will work with them to have technical discussions. Some companies don't need to have technical discussions, but a lot do. We'll have technical discussions where we will exchange claim charts, have presentations. We will respond if they have comments about those claim charts. And then at some point, we transition into business discussions to talk about the terms for a license agreement.
Q. Is there a further cap or limitation on FRAND in the patents that we have from Ericsson?
A. Yes, sir.
Q. Tell the jury what that is.
A. Well, when we acquired the patents, part of that acquisition was that we agreed to a cap on the royalty rate that we would request.

For the Optis Cellular Technologies portfolio, that cap was a .4 percent cap. And for the Optis Wireless Technology portfolio, that cap was a 0.9 percent cap.
Q. Have you stayed within those caps when you negotiated with

Huawei in this case?
A. Yes, sir.
Q. All right, sir. You haven't exceeded them, right?
A. Yes, sir.
Q. Okay. Now, have any other cell phone manufacturers taken a license to these portfolio of patents?
A. Yes, sir.
Q. Tell me -- tell me who that might be.
A. Well, that's HTC, ZTE, Kyocera, Samsung, BlackBerry, and Apple.
Q. All right. Let's go through them one at a time. Who is HTC?
A. HTC is a Taiwanese company that makes cell phones.
Q. And Kyocera?
A. Kyocera is a Japanese company that is also a cell phone manufacturer.
Q. ZTE?
A. ZTE is a Chinese company that's -- does cell phones and infrastructure equipment.
Q. Samsung, I assume, everybody knows, but tell us.
A. Samsung is the world's largest, as far as volume, handset maker.
Q. And Apple?
A. Apple is also one of the top three handset makers.
Q. When you talk to these companies about taking licenses, did

you talk just about, for example, these five patents?
A. No, sir.
Q. Did you talk about a whole bunch of patents, a whole family of patents, a whole portfolio of patents?
A. We would present a portfolio, but we would also typically discuss some smaller subset of that.
Q. One of the things I also heard the lawyer for Huawei say is that we never offered them a license to these five patents; is that true?
A. We offered a portfolio license, but we did not single out these patents.
Q. Well, did they ever come to you and say: You know, we'd like to have these five patents and just license those and let us pay you a fair rate for them?
A. No, sir.
Q. Never did that?
A. No, sir.
Q. I guess they could have?
A. Yes, sir.
Q. But they didn't do it?
A. No, sir.
Q. All right. Tell me what sort of these license agreements, what do they look like? Are they big, thick documents?
A. They can be lengthy documents. The agreements themselves can be 20, 25 pages, but then if you put the list of patents

on, then it can be rather lengthy.
Q. And what kind of patents usually get included?
A. Usually the cellular essential patents are always included.
Q. And then they may get some non-essential patents?
A. Yes, sir.
MR. BAXTER: Your Honor, at this juncture, I'm going to talk about some documents that have been marked confidential, not by us, by other parties, and I would ask the Court to seal the courtroom at this time.
THE COURT: All right. Based on that request, the Court is going to order the courtroom to be sealed, which means unless you are subject to the protective order that's been entered in this case, you should excuse yourselves until such time as the courtroom is unsealed and the public is invited to return.
If you're not subject to the protective order in this case, you should excuse yourselves from the courtroom at this time.
Do we have some agreement regarding corporate representatives?
All right. The rec -- for the record, the courtroom is sealed.
(Courtroom sealed.)
(Sealed Portion No. 1 saved in separate sealed transcript.)

(Courtroom unsealed.)

THE COURT: Let's continue, counsel.

MR. BAXTER: Thank you, Your Honor.

Q. (By Mr. Baxter) Was there litigation with any of these people on this slide, Mr. Warren?

A. Yes, sir, there was.

Q. Who?

A. We had litigation with Kyocera, with ZTE, with HTC, and with BlackBerry.

Q. Did those all wrap up fairly quickly, or were they a long and drawn-out process?

A. Those all wrapped up rather quickly after litigation was filed.

Q. Okay. You entered into negotiations and reached a compromise?

A. Yes, sir.

Q. Okay. Now, I take it that it's -- in order to enforce your patents, it can be both costly and lengthy to do so if you're in litigation?

A. Yes, sir.

Q. Why -- why do you do a portfolio rate instead of just attaching a rate to each of the patents? Why do you do that?

A. If we were to do each patent even just in the United States, it would take months, if not many, many years to go through all of that.

Q. Okay. I think we heard counsel for Huawei say it was what they did, too. It was their business model, as well. Did you hear that?
A. Yes, I did, sir.
Q. Okay. And is that pretty standard in the industry?
A. Yes, sir, it is.
Q. Now, when did you start negotiating with Huawei?
MR. BAXTER: Can I see Slide 10, please, Mr. Moreno?
A. It was early in 2014.
Q. (By Mr. Baxter) And how did that start?
A. It started with a letter that we sent them letting them know that -- the first letter, that we had the Optis Cellular portfolio. And then there was shortly after that a second letter that let them know we had the Optis Wireless portfolio.
Q. And what form did those negotiations take?
A. Well, we -- we met with them a number of times. There was some discussions around the -- the purchase of some patents. There was -- over time, finally narrowed in on just licensing the cellular essential patents.
Q. Did -- did offers go back and forth? Where did you start?
A. We started with .8 percent for both of the portfolios together.
Q. And where did they start, do you remember?
A. I believe it was around just under $290,000.00.
Q. For -- for -- for what?

A. For a full paid-up license.
Q. They offered you $290,000.00 for five, 6,000 patents?
A. Yes, sir.
Q. Well, did you think that was fair?
A. No, sir.
Q. Did you think it was reasonable?
A. No, sir.
Q. Did you even consider it for a second?
A. Just a second.
Q. Okay. And said?
A. We said that that wasn't acceptable, it wasn't a fair value for our portfolio.
Q. All right. Did they ever explain to you why they thought they could pay $290,000.00 for 6,000 patents?
A. They had some kind of rate that they were trying to apply, but it wasn't data that -- that we had access to or we thought was reasonable.
Q. All right, sir. Did those negotiations continue through '15 and '16 and '17, and here we are?
A. Yes, sir.
Q. Did the offers ever get any better?
A. Yes, sir.
Q. All right. Tell us what the -- what the last offer was.
A. The last offer from June was a .09 percent --
MR. BAXTER: Can I see Slide 15, Mr. Moreno?

A. -- from the U.S.
Q. (By Mr. Baxter) .09 percent?
A. Yes -- yes, sir. .056 percent for Europe, and .04 percent for China and the rest of the world.
Q. Was that anywhere near what anybody else had paid?
A. No, sir.
Q. Was it higher or lower?
A. Lower.
Q. Much lower?
A. Yes, sir.
Q. All right. Did you make a counteroffer at any time that was less than your initial offer?
A. Yes, sir, we did.
Q. Tell me what your last offer was.
A. Our last offer was .256 percent for -- it was defined as major markets. That was basically the developed countries, major European countries. .100 for China. And then .130 for basically the rest of the developing countries.
Q. So you still were willing to give them a low rate for sales inside China?
A. Yes, sir.
Q. Is that where they sell most of their phones?
A. Yes, sir, it is.
Q. Well, is that still on the table, this offer?
A. No, sir.

Q. What are we asking for in this case? Do you know, Mr. Warren?
A. Yes, sir, I do.
Q. Tell the jury what it is?
A. We're asking for our maximum, the .4 percent for the Cellular -- Optis Cellular portfolio, and the .5 percent for the Optis Wireless portfolio, so for a total of .9 percent.
Q. What about for the video patent?
A. The video patent is -- is separate, and we've got damages that we'll show for that. And I think that it was the seven, $8 million range.
Q. All right, sir. Now, is it standard that once you've entered into these negotiations and you've offered -- they made you this low ball offer, and you've given them a FRAND offer, to go back up? Why are you asking this jury to give you more than you offered to settle with them for?
A. Well, there -- didn't result in a settlement. We've had to go through and get ready, and now we're in litigation.
Q. Is that like I asked Ms. Settles today on the jury panel if she had to evict her renter, but she offered to take less rent, but when she sued them, she wants the whole amount. Are you in that same renter boat?
A. Yes, sir.
MR. YOUNG: Objection, leading and argumentative.
MR. BAXTER: That's all I have, Your Honor.

THE COURT: Well, I'll sustain the objection to that question. If you want to rephase it, fine. If you don't --

MR. BAXTER: I will, Your Honor.

Q. (By Mr. Baxter) Do you feel like, Mr. Warren, that you had to give them the friends and family deal that you offered during negotiations when you end up here in the courtroom?

A. No, sir.

Q. Would you like to get full compensation for your patents?

A. Yes, sir.

MR. BAXTER: Now I pass the witness, Your Honor.

THE COURT: All right. Is there cross-examination from the Defendants?

MR. YOUNG: Yes, Your Honor.

CROSS-EXAMINATION

BY MR. YOUNG:

Q. Good afternoon, Mr. Warren.

A. Good afternoon.

Q. Have you or I met or talked before?

A. Not talked before. I've seen you in the courtroom.

Q. Nice -- nice to meet you.

MR. YOUNG: I have a section for which the Court, unfortunately, will need to be sealed, and actually I think the whole testimony I would move that the courtroom be sealed.

For the first part, I believe the Huawei people also

need to leave, but they will be able to come back at a certain point pursuant to our agreement. Would that be acceptable from the Court's standpoint?

THE COURT: Well, if you're moving me to seal the courtroom, I'm certainly open to doing that, just as I did for Plaintiff. If you have some variation on that regarding Huawei personnel, then -- you know, if there's an agreement between the parties, I'm open to that, I just need to know what it is and when it would attach, Mr. --

MR. YOUNG: Yes, I will do that. For the Court's information, the initial part of my questions will relate to PanOptis confidential information which I believe PanOptis would not want Huawei to see.

THE COURT: Why don't we do it this way. I'll seal the courtroom with regard to anybody not subject to the protective order. And if there's a point where you think a modification of that is appropriate, you can raise it with me then.

MR. YOUNG: Thank you, Your Honor.

THE COURT: I'll order the courtroom sealed. If you're present and you're not subject to the protective order in this case, you're directed to excuse yourself until the courtroom is unsealed.

MR. YOUNG: Your Honor, I have some binders, one for the witness and --

THE COURT: You may approach with your binders.

MR. YOUNG: Thank you, Your Honor.

THE COURT: And for the record, the courtroom is now sealed.

(Courtroom sealed.)

(Sealed Portion No. 2 saved in separate sealed transcript.)

(Courtroom unsealed.)

THE COURT: Proceed with your redirect, counsel.

MR. BAXTER: Thank you, Your Honor.

REDIRECT EXAMINATION

BY MR. BAXTER:

Q. Let's start right there with that survey. Mr. Warren, it must have been all your patents that weren't any good; is that what it says?

A. I'm sorry. Can you repeat that?

Q. Yeah, that survey he wanted you to look at --

A. Yes, sir.

Q. -- were those all your patents?

A. No, sir.

Q. Did it say they were your patents?

A. No, sir.

Q. No? Do you know if any of your patents were in that study?

A. No, sir.

Q. Okay. Didn't apply to you?

A. I've never seen this study before, no, sir.
Q. All right. Now, when you're negotiating, it's sort of like buying a car or selling a used car to somebody, do you -- do you expect them to say all good things about your patents?
A. Oh, no, sir.
Q. Is that sort of standard in the industry they're going to bad mouth your portfolio or your patents?
A. Yes, sir, it is.
Q. But at the end of the day, they take a license?
A. Yes, sir.
Q. Everybody except Huawei. They just wouldn't pay up?
A. Well, Huawei has not agreed to take a license.
Q. Now, I think we heard Mr. Young say that they had offered you $35 million. Sounds like a lot of money. Do -- do you remember getting that offer?
A. Yes, sir.
Q. Did you take it?
A. No, sir.
Q. Can I do a little math on that? How long was that license for, do you remember?
A. I believe that was for a -- I don't have the document, I believe it was for a paid-up license.
Q. Well, let's assume --
MR. BAXTER: Let's look at DX-376, Mr. Moreno, if you can.

Q. (By Mr. Baxter) It's the same document we showed you, and it's talking about a license term from January 1 of 2013, to December 31 of 2020.
A. Yes, sir.
Q. Seven years?
A. Eight years.
Q. Eight years.
All right. Well, I'm going to try to do some math.
If it's eight years --
MR. BAXTER: Can I approach the board, Your Honor?
THE COURT: You may.
MR. BAXTER: Thank you.
Q. (By Mr. Baxter) Now, we're fixing to get in deep trouble here about the math, but if it's $35 million for eight years, about how much is that a year?
A. 4.4.
Q. Well, let's see, 32 and 30, 4.3 --
A. 4.4 million per year.
Q. 4.4.
All right. So when you break it down it was for $4.4 million a year, right?
A. Yes, sir.
Q. And for 6,000 patents?
A. Yes, sir.
Q. All right. So if it's -- and I'm going to get Ms. Truelove

to do the math for me.

MR. BAXTER: Ms. Truelove, you know I can't do it. Would you divide 6,000 into 4.4 million.

THE COURT: Bring him the calculator, Ms. Truelove.

MR. BAXTER: Thank you, Your Honor.

Q. (By Mr. Baxter) So if it's four, four, that comes out to $733 per patent per year?

MR. YOUNG: Objection, leading. And counsel was testifying, Your Honor.

MR. BAXTER: I'm just asking him.

Q. (By Mr. Baxter) Does that math look good to you?

THE COURT: I'll overrule the objection. State -- state the question.

Q. (By Mr. Baxter) $733 for standard essential patents a year, is that all attractive to you?

A. No, sir.

Q. Is that anywhere near the range what anybody else has paid?

A. No, sir.

Q. Is that why you turned down the $35 million offer because it wasn't realistic?

A. Yes, sir.

Q. Now, on the Kyocera patents, do you remember what the -- what the blended rate was for Kyocera, was it 4.2?

A. It was .42 for most of the world and point --

MR. YOUNG: Your Honor, may I remind counsel that

there are Huawei people in the room?

THE COURT: Well, you're not here to remind counsel. You're here to address the Court. If there's an issue regarding confidentiality, you need to approach the bench.

MR. BAXTER: Let me ask -- let me ask him a different question.

THE COURT: All right.

Q. (By Mr. Baxter) Is the blended rate for Kyocera paid, is it a worldwide rate?

A. Except for Japan.

Q. Where there it was even lower?

A. Yes, sir.

Q. Okay. If you were to grade patents across the world, who has the strongest patent system in the world?

A. The U -- the United States does.

Q. And you end up paying more if you're just getting U.S. patents, you end up paying more than you do for patents from, I don't know, France or Zambia or somewhere?

A. Yes, sir.

Q. All right. And these are all U.S. patents?

A. Yes, sir.

Q. Did Huawei ever tell you, well, we'd like to buy your portfolio, but, you know, those five patents in that lawsuit, we're not interested in those because they're no good?

A. No, sir.

Q. They didn't tell you that?
A. No, sir.
MR. BAXTER: I pass the witness, Your Honor.
THE COURT: Is there additional cross, Mr. Young?
MR. YOUNG: Very brief, Your Honor.
THE COURT: Mr. Baxter, you need to clear the board on the easel, please.
MR. BAXTER: I'm sorry?
THE COURT: You need to turn the page.
MR. BAXTER: I will, Your Honor. Thank you.
THE COURT: Since you passed the witness.
MR. BAXTER: Thank you, Your Honor.
THE COURT: All right. Mr. Young, now you now proceed.

RECROSS-EXAMINATION

BY MR. YOUNG:
Q. Mr. Warren, just to follow up on one question that Mr. Baxter asked you, is it true actually that everyone except for Huawei has signed a license with PanOptis?
A. No, sir.
Q. Thank you very much.
MR. YOUNG: I pass the witness.
THE COURT: Further direct?
MR. BAXTER: No, Your Honor.
THE COURT: You may step down, Mr. Warren.

Counsel, approach the bench, please.

(Bench conference.)

THE COURT: How long are these depositions?

MR. STEVENSON: Less than ten minutes.

THE COURT: Okay. I just am trying to figure out when to give the jury a recess. Let's get them out of the way, if they're less than ten minutes.

Those are your next witnesses, correct?

MR. BAXTER: Yes, sir.

THE COURT: Okay. Let's proceed with your depositions.

MR. BAXTER: All right.

(Bench conference concluded.)

THE COURT: All right. Plaintiffs call your next witness.

MS. WOODIN: PanOptis calls Xuxin Cheng by deposition. Mr. Cheng is the head of Huawei's licensing department and vice president. He offered testimony on FRAND and licensing topics on behalf of Huawei at his deposition. And this clip will be about four minutes.

THE COURT: Let's proceed with the witness by deposition.

(Videoclip playing.)

QUESTION: Good afternoon, Mr. Cheng. Will you please state your name for the record?

ANSWER: My name is Xuxin Cheng, X-u-x-i-n, C-h-e-n-g.

QUESTION: What is your current title at Huawei?

ANSWER: I am the head of the licensing department. In addition, my title is also vice president.

QUESTION: Why does Huawei offer a license -- offer to license its portfolio on a portfolio basis?

ANSWER: It is a more effective way of doing so -- of doing -- of doing the work.

QUESTION: Why is that?

ANSWER: If we are taking it patent-by-patent, whether it is for negotiation or litigation, the cost would be even higher.

QUESTION: That's because there are a lot of patents, right?

ANSWER: Yes.

QUESTION: It would be expensive to, for example, sue on every patent in Huawei's portfolio, correct?

ANSWER: Yes.

QUESTION: Does Huawei make offers to license its portfolio on a global basis?

ANSWER: Yes.

QUESTION: Why?

ANSWER: Because Huawei's portfolio is a very large one, and in the main regions and countries of the world, we have high quality of patents, as well as high quantity of

patents.

QUESTION: So it would also be more efficient to negotiate on a global basis; is that right?

ANSWER: Yes.

QUESTION: It would be expensive to sue on every patent in Huawei's portfolio in every different country where Huawei has a patent. Agree?

ANSWER: Yes.

QUESTION: That would not be an efficient way to do negotiations?

ANSWER: Yes, that's correct.

(Videoclip ends.)

THE COURT: Does that complete this witness by deposition?

MR. STEVENSON: Yes, Your Honor. Our next witness is a live witness, an expert.

THE COURT: All right. Then before we proceed with the next witness, we're going to take a short recess, ladies of the jury. If you'll simply leave your notebooks in your chairs, follow all the instructions I've given, including not to discuss the case with each other or anyone, we'll be back in here shortly to continue. The jury is excused for recess at this time.

COURT SECURITY OFFICER: All rise for the jury.

(Jury out.)

THE COURT: Plaintiffs, am I correct Dr. Madisetti is the next witness?

MR. BURGESS: Yes, Your Honor.

THE COURT: What's your expected ballpark length on your direct, Mr. Burgess?

MR. BURGESS: I anticipate -- I anticipate roughly two hours.

THE COURT: Let's take a recess. The Court stands in recess.

COURT SECURITY OFFICER: All rise.

(Recess.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

Plaintiffs, are we prepared to -- are you prepared it call your next witness?

MR. BURGESS: We are, Your Honor.

THE COURT: All right. Let's bring in the jury, please, Mr. Beck.

COURT SECURITY OFFICER: All rise for the jury.

(Jury in.)

THE COURT: Please be seated.

Plaintiffs, call your next witness.

MR. BURGESS: Your Honor, Plaintiffs call Professor Vijay Madisetti.

THE COURT: All right. Dr. Madisetti, if you'll come

forward and be sworn by the courtroom deputy, please.

(Witness sworn.)

THE COURT: Please come around and have a seat here at the witness stand.

All right. Mr. Burgess, you may proceed with your direct examination.

MR. BURGESS: Thank you, Your Honor.

MR. BURGESS, PLAINTIFFS' WITNESS, SWORN

DIRECT EXAMINATION

BY MR. BURGESS:

Q. Good afternoon, Professor.

A. Good afternoon.

Q. Will you please introduce yourself to the jury?

A. My name is Vijay Madisetti.

Q. And will you please explain to the jury what your role in this case has been?

A. Yes. I've been asked to look at the patents from PanOptis, study the accused Huawei products, and offer an opinion on infringement, and also on validity.

Q. And what are you here to testify today?

A. Today, I'm specifically here to talk about infringement.

Q. And which of the two patents are you going to discuss for the jury?

A. I'll be talking about the '238, which is the video patent, and also the '216, which is the LTE patent.

Q. And -- and can you give the jury a preview of what your conclusions are in regard to those two patents?
A. Yes. Based on my analysis and my opinion, the accused Huawei products meet every limitation of Claim 1 of the '238 and also Claim 1 of the '216 patents.
Q. And so what does that mean?
A. It means that the accused products infringe both of the asserted claims.
Q. Are you familiar with the concept that we've heard a little bit about today, standard essentiality?
A. Yes.
Q. Will you tell the jury, please, what you understand that term to mean?
A. Standard essentiality means that there's no way to practice the standard without also infringing these patents.
Q. And --
A. From a technical point of view.
Q. As part of your analysis, did you reach a conclusion as to whether the '216 is a standard essential patent?
A. Yes.
Q. And what did you conclude?
A. In my opinion, the '216 is a standard essential patent.
Q. Which standard is the '216 patent essential to?
A. It's essential to the LTE standards.
Q. And what about the '238 patent, did you reach a conclusion

as to whether that one is also standard essential?
A. I did.
Q. And what was your conclusion?
A. It's not a standard essential patent.
Q. And why is that?
A. Because portions of it are covering the H.264 video standard, but it also includes audio.
Q. And -- and does the H.264 deal with audio?
A. No.
Q. Only video?
A. Yes.
Q. Let's talk a little bit about your background. Is that okay?
A. Yes.
Q. Will you tell the jury where you're from originally?
A. I originally am from India. I came here in 1984.
Q. When you say "here," you mean to the United States?
A. Yes.
Q. And since you came here in 1984, have you become a citizen of the United States?
A. Yes, for over 20 years.
Q. Where do you live now?
A. I live in Atlanta, Georgia.
Q. And why did you come to the USA?
A. I came here for my doctorate degree at the University of

California in Berkeley, California.
Q. And where do you work now?
A. I teach at Georgia Tech, it's a top technical university. I've been teaching there for almost 25-plus years.
Q. And do you have a family?
A. Yes, I'm married to Anitha, we have a son, and he goes to Georgia Tech as well.
Q. What's that like having your son at the same school with you?
A. You should ask him.
Q. At Georgia Tech, what's your -- well, let me ask you, your Ph.D. you mentioned, what did you focus on? What was your field of study?
A. It was in electrical engineering and computer sciences.
Q. And what do you focus on at Georgia Tech as a professor?
A. Yes, I have a slide on that.

Yes, I've been focusing on primarily in the area of signal processing, image processing, video processing. I teach courses in chip design, as well as in wireless. And I also do research in these for different organizations such as the U.S. Government.

Q. And does your work at Georgia Tech relate to a subject matter that you're going to be discussing today?
A. Yes, it does.
Q. And can you explain how that is?

A. Yes, because the '238 patent is about audio and video, and I have been working in this area for the past 30 years. The '216 is about cellular, and I also have been working in this for the past 25 years.

Q. How many students would you guess you've taught over the 30 years you've been at Georgia Tech?

A. Almost 10,000.

Q. And have you ever won any awards for your teaching?

A. Yes. And so here are two awards that I'm particularly proud of. On the left is what is called American Society of Engineering Education. So this is a society, one of the oldest engineering societies from the late 1800s. So Hewlett-Packard and ASE, they awarded me the Terman medal for significant contributions electrical engineering while under the age of 40.

Q. And what about the award on the right?

A. The award on the right is given by students, and this simply says thanks for being a great teacher from some of the students at Georgia Tech.

Q. Are you also a scientific fellow?

A. Yes.

Q. And can you tell the jury what that means?

A. The IEEE, which is Institute of Electrical and Electronics Engineers, is the largest professional body in the world. It has 400,000 members. So each year they select one-tenth of one person, that's 400 members, to the rank of fellow. I was

fortunate to be selected as a fellow in 2007.
Q. Have you written any books?
A. Yes, I've been -- as a teacher, I've been very active at teaching in textbooks. My first book I wrote in 1995. Since then, I've been writing a number of books. The most recent one earlier this year has been in the area of blockchain applications.
Q. Do any of your books relate to the subject matter of the two patents you're going to discuss today?
A. Yes, most of them deal with audio/video content with networking, as well as with computing and communications.
Q. In addition to your books, have you written any articles that have been published in scholarly journals?
A. Yes.
Q. Can you describe those generally?
A. Yes. On the right is an example of low-bit-rate video coder -- video coder. And this was a paper that I authored with my student in 1988. And that's 20 years ago. And that talks about a particular standard called H.263.

On the left is something a little more recent, in 2004, where I looked at the particular standard we were talking about, which is called H.264 or advanced video coding, and this was streaming over the Internet which at that time was relatively new.
Q. And are these the only two articles you've written over the

years?
A. No. I've been busy -- quite busy writing. I have several hundred articles.
Q. And is that part of your job at Georgia Tech?
A. Yes, it is.
Q. Do you have any patents?
A. Yes. I have -- I think I've been allowed about four or five patents, and these two have issued. And these are shown on Slide No. 8.
Q. And what do your patents relate to generally?
A. Generally, they relate to storage of content, transmission of content, and being focused a little more on security in these two patents.
Q. Have you started any companies?
A. Yes. Over the past years, I've been active. The first one was in -- was called VP Technologies. It was more in the defense market. It did a lot of chips for Lockheed and for Boeing.

And the second one that is relevant to this particular case is Soft Networks. And as a part of this, I developed a lot of software that's used for audio/video and other codecs in Ericsson and Sony Ericsson forms.
Q. As -- or in relation with your work at Georgia Tech, have you been involved with any industry groups or standard setting bodies?

A. Yes, I have.
Q. Which ones?
A. So we heard about ETSI today, and ETSI and 3GPP are closely related together as a part of the Third Generation Partnership Project, and they are particularly focused on wireless and mobile communication standards.
Q. And what -- what's been your involvement with 3GPP?
A. Georgia Tech is a member of the 3GPP and ETSI, and I'm the official representative of Georgia Tech to these standards bodies.
Q. And what is -- what does a standard setting body like 3GPP exist to do? What's its -- what's its essential purpose?
A. Since we heard a lot about standards earlier today, standards are necessary because you need to have products all work together. And the standards body help bring together the leading companies and organizations so that they can work together to create standards that could then be used by operating products.
Q. How does a standards setting body like 3GPP go about actually creating a standard?
A. So it creates a technical working group, and then invites different members to submit proposals. They evaluate these proposals. They make further modifications. And over time, they get incorporated into something called technical specifications. And once the technical specifications are

released, they become the sort of rule book by which you make products that comply with the standard.

Q. Are we going to look at some of those technical specifications later?

A. Yes, we will.

Q. So you mentioned that Georgia Tech is a member of 3GPP. About how many members are there?

A. There are almost 200 or more members. Of course, there are more than a hundred large companies, but they're about 200 members.

Q. So can you give some examples of companies that folks might have heard of that are members?

A. Yes, companies like Ericsson that you've heard about, Panasonic, Samsung, companies that -- like Nokia and so on are all members of 3GPP ETSI bodies.

Q. What about Huawei?

A. Huawei is also a member.

Q. And besides -- besides teaching, starting companies, writing books, writing papers, winning awards, do you do any other work in industry?

A. Yes. I've been consulting for a number of companies, both in the litigation and the technical side. I have consulted for companies like AT&T, for MIT, Lincoln Labs, for Johns Hopkins, for Google, as well as I developed some products for Cisco.

Q. And have you ever done any consulting work for Huawei?

A. Yes. Several years ago, I -- I represented Huawei at the International Trade Commission.
Q. And was that a patent dispute?
A. Yes, it was.
Q. So remind us again, what was your job here? What were you tasked to do?
A. Yes. I was here to provide an independent opinion as to the PanOptis patents and provide an opinion whether PanOptis patents and the asserted claims were practiced by the accused Huawei products.
Q. And as part of completing that task, did you generate some written work product?
A. Yes. Over the past year, I've done a lot of work. I've looked at a lot of things, and I've written, I think, four reports, totalling over 500 pages. And these four reports are shown here. They describe various opinions that I've offered, as well as the basis for these opinions.
Q. And in performing your analysis and writing your reports, what sorts of materials did you consider?
A. A lot of evidence was produced in this case. So the types of evidence that I've analyzed are the patents and the file histories themselves. I've looked at the Court's claim construction and applied that. I've also looked at the technical documents and the specifications of the various products. I've also looked at source code. Then the standards

that we discussed -- for example, H.264 and 3GPP ETSI standards. Also, the deposition testimony, like the type we just heard. And also admissions by Huawei in response to questions from PanOptis lawyers.

Q. You mentioned source code. Would you explain to the jury what that is?

A. Source code is of two types. It's software that shows how a product works. So when you look at the source code, it tells you what the product is doing and capable of doing. And the other type of source code actually is used to design the product itself. And that also provides you valuable information as to the functionality of the product as sold.

Q. Are we going to see some later?

A. Yes, we will.

Q. And, finally, are you being paid for the work that you've done in this case?

A. Yes.

Q. And what -- what's the rate that you've charged?

A. It's $500.00 an hour.

Q. And is that your typical consulting rate?

A. Yes.

Q. And are you getting paid any more or less depending on the outcome of this trial?

A. No. I'm just paid for my time and not for my opinions.

Q. So let's turn to the '238 patent. So this is -- is this

the video patent that you referenced earlier?
A. Yes. The '238 patent is the U.S. Patent No. 7,769,238.
Q. And this is Plaintiffs' Exhibit 1?
A. Yes.
Q. And who's the company that developed the technology that's described and claimed in the '238 patent?
A. The company is Panasonic Corporation that I've highlighted below, and Panasonic is the leader in the area of audio and video.
Q. And just at a high level, can you describe for the jury what was the problem that the '238 patent was attempting to address?
A. Yes. So if you go to the next slide, the '238 is addressing a critical problem. Suppose you are watching something like YouTube on your phone, you are essentially downloading or streaming video and audio. So the problem that is addressed is how to compress the file size or the size of the audio and the video so that you're able to download quicker and also use less bandwidth. So that's the general problem addressed by the '238.
Q. And do you -- can you use this figure to just describe, again, at a high level -- we'll get into more detail later -- but at a high level, how does video compression work?
A. Yes. So, typically, video is a number of frames. So each frame has a lot of information. So let's look at this example

of five frames.

So the first frame consists of a cat crawling up the window. You'll notice that with each successive frame, there is some information that is changing and some information that is not. So you -- the information that is not changing is the building in the background, as well as the window. So the one way to reduce the size of the image in the video is to send only the motion of the cat and keep the background image and send it just once. So that is how you can save a lot of data from being sent.

Q. Do you have an example that illustrates this in a little more detail?

A. Yes. So let's take an example of Frame 1 where there are two friends talking, and they're looking at a book. And let's look at the second frame.

You'll see that there is some motion, but it's not much. So what we could do is send the first frame and only the difference between the first and the second frame. So that will result in something like this.

This is still a lot of information. So we could do a little better. We could actually predict the motion of these two. And say one is moving to the left, the other is moving to the right. So maybe we could predict them and then take the difference, that way we have much smaller amount of information to send.

Q. So what is it -- what is it that we call the product at this point?
A. Yes, on Slide 21, I call that the residual because that is what is remaining after what is called as -- motion compensation or prediction.
Q. Now, compared to the earlier slides we saw, this looks like quite a bit less information, but is this still a significant amount of information?
A. Yes, you still have to send this over to other side along with the first frame so that the second frame can be reconstructed.
Q. And so once you have the residual, what do you do with it?
A. Okay. So the next step is to create blocks. So you break up that residual into a number of blocks. In this case, there are 64 blocks. That's 8-by-8.

And then you create something called a transform and a quantization. So what that does is that for each block it identifies the main frequencies. So just like the human voice has high frequencies and low frequencies, this sort of image blocks do have their own frequency content. So you identify what are the frequencies you like to send over to the other side.
Q. And how does that relate to the Block X that we see on the screen right now?
A. So if you look at Block X that I have created here, it has

six -- it has five frequencies in blue, and rest of the block just has zero. So with each block, you have to send five values over to the other side so that they can reconstruct the original residual.

Q. And why is the number of non-zero coefficients in the block important?

A. It's because that you are able to then reconstruct on the other side a faithful copy of the frame that was compressed.

Q. And how does the -- the '238 patent relate to the number of non-zero coefficients in a block?

A. The '238 patent provides what is called a context. So what it says is that to encode the number of non-zero coefficients in Block X, which is 5, it looks at the neighboring blocks, which are B and D. And says it if B or D have in this case six coefficients, let us use one particular table to encode this No. 5. If they have eight coefficients each, or something else, let us use a different table.

So what it does, it uses the context of the neighboring blocks to encode the number of non-zero coefficients.

Q. And can you explain why is it a smart strategy to use the context of the neighboring blocks as a basis for the decoding?

A. Yes. Because it's more efficient because if you have a measuring system that is designed for tall people and you have a measuring system that is designed for short people, it's --

it's going to use a lot of units if you try to measure both tall and short people with the same unit. So it's better to choose a scale for tall people and a separate one for short people.

And so once you know the context of the block, you're able to then send more efficient information.

Q. Is it -- is it typically going to be the case that the number of non-zero coefficients is going to be somewhat similar to the neighboring blocks?

A. It is. That's the reason why we relate it to, because they are similar activity, so if it's a sport scene or something else, they have similar -- similar activity and similar statistics. So for that reason, it is more efficient to encode them with the context.

Q. Let's -- let's talk in a little bit more detail about the way the '238 patent works.

How does the '238 patent use context to code the number of non-zero coefficients in a block?

A. Yes, so here I use an example on the left. So on the left, you have two blocks, B and D. Both of them have six non-zero coefficients shown in yellow. And Block X has five coefficients. So what we look first is in the -- at the table on the right, which is Chart 5.

Chart 5 tells you that if you have a predictive value of between four and six, use VLC Table 3.

Since we have a predictive value of six plus six divided by two, say an average, we choose VLC Table 3. And VLC Table 3 is depicted in Chart 4.

In Chart 4, if you look at the No. 5 that you want to encode in -- in the Block X, you send a code called 0111. So this approach allows you to pick the Table 3 and encode 5 as 0111. And you can also encode -- so in this particular case, you're sending 011 that denotes the value of the non-zero coefficients as 5.

Q. And will we -- will we see later that this is the same approach that's used in the H.264 video compression standard?

A. Yes.

Q. Will you explain to the jury, sort of from a high level perspective, how coding the number of non-zero coefficients fits into the overall picture of what happens during video compression?

A. Yes. So standard typically is the sum of these various building blocks. So the -- for example, we discussed the motion, how you predict the motion of the cat, so in this case, it's a purple key that describes the motion. Then you decide how you want to predict the motion of the cat or the person, that is a green key. You also look at the -- how you quantize or transform those coefficients into frequencies. That is the yellow key. And then the blue key is the number of non-zero coefficients.

So different standards describe how these different keys, or a combination of them, may be sent over to the other side. And H.264 is one such standard that we will focus on.

Q. What is Plaintiffs' Exhibit 0112?

A. Plaintiffs' Exhibit 0112 is a copy of the H.264 or the advanced video coding standard.

Q. And is this the standard that we're going to discuss during your analysis today?

A. Yes.

Q. What part of the H.264 standard uses the invention of the '238 patent?

A. So this is a quick preview. Section 9.2 of the H.264 standard has a section called CAVLC parsing process. This is an example of a section that is relevant to the '238 patent, and it's part of the H.264 standard.

Q. Can you explain what the acronym CAVLC means in terms of the explanation that you just gave for how it works?

A. Yes, CAVLC stands for context adaptive variable length coding. Context means you use the neighboring blocks. Adaptive means you use the neighboring blocks to select a correct VLC table, and that's exactly as I discussed in the last few slides. The same process has been incorporated into the standard. For example, in Section 9.2.

Q. And is CAVLC mandatory in the H.264 standard?

A. Yes. All implementations of H.264, you have no choice but

you have to support CAVLC, does -- it is essential to the standard.

Q. And what is CABAC that shows up in the bottom of the two blocks?

A. CABAC is context-adaptive arithmetic coding. That is an optional part of the standard. It can be used, but it is more computationally expensive. And it is not -- and the standards committee, which consists of experts in this area, they did not consider that to be a suitable substitute and considered that as optional in some of the implementations of the standard.

Q. Are the -- the mandatory CAVLC and the optional CABAC intended for different purposes?

A. Yes.

Q. Would you explain?

A. The CABAC is more for desktop type of users while the CAVLC is typically for products such as cell phones and tablets.

Q. Now, has Huawei admitted that the products that have been accused of infringing the '238 patent utilize all of the sections of the H.264 standard that you're going to talk about today?

A. Yes, they have admitted. And Plaintiffs' Exhibit 2125 confirms that Huawei, in its response to Request For Admission No. 3, admitted that, the '238 accused products implement the sections from ITU-T recommendation H.264 that are specifically cited in the claim charts from PanOptis.

Q. And which sections of the H.264 standard are those?
A. The sections are listed on Slide No. 29, and there are a number of sections that Huawei has admitted that its products satisfy and comply with. They're also in the juror's notebook on Pages 34 -- 33 and 34.
Q. And as we go through your analysis, will you point out the particular sections that are relevant to the part of the analysis that we're talking about?
A. I will.
Q. So which claim of the '238 patent have you analyzed and determined that Huawei infringes?
A. Claim 1 of the '238 patent has been asserted in this claim -- in this case, and Slide 30 shows a copy of Claim 1 that I've analyzed and will present an analysis on.
Q. There's a whole lot of words there. Can you give the jury kind of a preview of how Claim 1 works using one of the figures in the patent?
A. Yes, I will.
Q. So what -- what do we see here? What's Figure 17?
A. So Figure 17 is actually a decoder. It is what is viewing the YouTube on your phone. So let us look at Figure 17. From the patent itself, it describes an example of how the decoder works. That means the viewer on the phone.
Q. So what's -- what's the -- where do we start, with the bit stream on the left?

A. Yes. So as you receive the video stream -- that is compliant with the H.264 standard, for example -- you are passing it through something called a bit stream analyzing unit which is No. 1401.

Q. And what comes out of the bit -- bit stream analyzing unit?

A. The bit stream analyzing unit separates out the 011 that was sent from No. 5 before, and that goes to something called a coefficients number decoder. And the coefficient number decoder then outputs to No. 5 because that's the value of the frequencies in the Block X.

Then we go further into the inverse quantizer and the inverse transforming blocks. And what then comes out is that residual.

Q. And what happens to the residual in the -- in the decoder?

A. Yes. So that residual is then the same shape of those two men talking, and that residual then will -- should be added to the motion compensated values from the previous frame.

So as you go a bit further in the animation, you will see that you choose whether you have an inter-picture prediction, that means you're using the previous picture, or intra means the same picture. Depending on what you choose as the encoder, you are then able to reconstruct from the residual the frame itself. And that results in the frame that you view on your screen in your mobile phone. So it goes through all these different steps as described by Figure 17 as an example.

Q. Will you give us an overview or a preview of what you considered to determine that Huawei infringes Claim 1 of the '238 patent?
A. Yes, I will.
Q. Would you do that, please?
A. So I looked at the '238 patent, its file history, and also the Court's claim constructions. I applied these in my analysis. I looked at the various product documents of these various accused products, their specifications, the discovery responses, the deposition testimony. I also looked at the Android source code because all the accused products support Android. And then I looked at the standard itself, the H.264 standard, and the various reports that were produced in this case.
Q. So let me ask you about that, because you mentioned earlier that the '238 patent in your opinion is not essential to the H.264 standard. So how did -- how were you able to rely on the H.264 standard as part of your infringement analysis?
A. Yes. So some claim limitations that focus on video, I relied upon H.264.
Q. And what -- what are the other claim limitations directed to?
A. The other claim limitations are focused on audio.
Q. And what -- what did you look at for those?
A. For those, I looked at other standards, such as the AS --

ASE -- ASE.
Q. And is that -- is that an audio standard?
A. Yes, that's a standard again. A very widely used standard, also used by YouTube and other programs.
Q. So which products did you consider and analyze with respect to Claim 1 of the '238 patent?
A. A list of the accused products that are considered for the '238 patent are listed on Slide 38. There are about 25 products ranging from Honor 6 -- Honor 6X, all the way to Huawei Nexus 6P. Most of them are cell phones. Some of them are tablets. And you'll find the list in the jurors' notebook on pages 32 to 33.
Q. What's the common thread that runs through all of these accused products?
A. All of them support video and audio. All of them decode video, such as YouTube.
Q. So what do we see here, Professor?
A. So what I've done here is I've created a more manageable view of Claim 1 where I've listed it as a table, and I've also numbered each claim limitation on the left with a numeral.
Q. So are we going to go through each and every one of these?
A. Yes, we will.
Q. And you mentioned earlier the Court's constructions. Did the Court provide special definitions of some of the language in Claim 1?

A. Yes, the Court did so.
Q. Is that what we see here?
A. Yes. And this is in Docket No. 114, also in the juror notebook. The Court construed variable length code table and also generated by coding limitations. I will discuss these in more detail later.
Q. And how did you treat the Court's construction in your analysis?
A. I applied the Court's construction in my analysis of each claim limitation that they applied to.
Q. So let's start with the preamble. Do Huawei's accused products satisfy the preamble of Claim 1, a receiving apparatus which receives multiplexed data which is obtained by multiplexing coded audio data and coded picture data?
A. Yes, they do. All the accused products satisfy this limitation which is called the preamble.
Q. What did you look at to determine that all the accused products have a receiving apparatus that receives?
A. Yes. Specifically, Exhibit 2121 that is shown on Slide 42 describes the operating system and the chipset used by each of these accused products. As you can see, the primary operating system is Android ranging from Version Android 4.1, all the way to Android 8.0. The hardware chipset is from three different suppliers. It's from Qualcomm, from HiSilicon, as well as one or two products are from MediaTek.

Q. And what is it about Exhibit 2121 that tells you that there is a receiving apparatus that receives in each of the accused products?
A. Yes. So if you go to the next slide, you will see that as an example, I looked at the Nexus 6P, which is Plaintiffs' Exhibit 0464. It confirms that you can receive data that is video and audio data in at least two ways. You can receive it over LTE, as shown on the top, or over WiFi. Some of the tablets are primarily WiFi, but most of the phones are both LTE and WiFi. So this confirms that you have a receiving apparatus that can receive video and audio data.
Q. Did you confirm that all of the accused products have that sort of a receiving apparatus?
A. Yes.
Q. And does anybody dispute that?
A. No. No.
Q. How do you know that the accused products can receive multiplexed coded audio and coded picture data?
A. So here is a specific Exhibit 464 for the Nexus 6P. It confirms that there's an audio codec, and the audio codec is AAC. It also confirms that there's a video codec that is the H.264. So this confirms that according to the limitation, you have coded audio data and coded picture data that I've highlighted in yellow that is part of the preamble.
Q. What is PX-2039?

A. PX-2039 is the requirement from Android. Android is the operating system, and Android Exhibit PX-2039 confirms that you have on the left an audio codec, and on the right, you have H.264 AVC video codec. It also confirms that on the bottom with respect to the video streaming requirements, it confirms that the audio and the video are multiplexed because they correspond to the same time offset.

Q. And I believe you said this, but just to be clear, do all of the accused products use Android?

A. They do. They use Android, different versions, 4.1 all the way to 8.0.

Q. Did you see anything else that suggested there were audio decoders in the accused products?

A. Yes, with respect to specific chipsets, you can see here that for the Qualcomm family, they use the -- the Google AAC decoder. And for the Kirin HiSilicon family, they can use the Google audio.

Q. And is this -- is this a hardware or software decoder?

A. This is a software decoder.

Q. And how about for video coders or -- or coders -- decoders to handle coded picture data?

A. For the video decoders, as shown on Slide 47, it's PX-2310 and PX-2307. Confirm that in a Qualcomm-based accused product, there's a Qualcomm hardware video decoder called Omx.qcom.video.decoder.avc. And AVC stands for advanced video

code, which is video coding, which is H.6 -- 264. And that's on Line 199.

On the right, for the HiSilicon Kirin family, there is a specific HiSilicon video.decoder.avc. And that's also hardware decoder for the coded picture data.

Q. And is .avc a reference to H.264?

A. Yes.

MR. BURGESS: Your Honor, could I have permission to turn my board around?

THE COURT: Yes, yes, you may.

Q. (By Mr. Burgess) So are we finished with the preamble, Dr. Madisetti?

A. Yes.

Q. And as we go through these one-by-one, I'll check them off --

A. Thank you.

Q. -- so we can keep track.

Do all the accused products satisfy Limitation 1A, a demultiplexing unit configured to separate the multiplexed data into the coded audio data and the coded picture data?

A. Yes, they do.

Q. And what -- what is -- what is the AwesomePlayer and the NuPlayer that are described in PX-1162 and PX-1182 respectively?

A. All right. So all the accused products support Android.

So between versions of Android 4.1 until 6.2, there is a player for media called AwesomePlayer. And in the versions from 6.0 to 8.0 for Android, there's a -- there's a player called NuPlayer. So both of these, they satisfy the -- the description, the -- the claim limitation. They're configured to multiplexed data into coded audio data and coded picture data.

Q. Just to be clear, what is it that's multiplexed?

A. The audio and video are multiplexed together because they are synchronized with each other so that you can play the audio and the video together.

Q. What -- what is MediaExtractor that's described in PX-2041?

A. Android describes the use of specific type of application called a MediaExtractor, and Plaintiffs' Exhibit 2041 describes that the MediaExtractor facilitates extraction of demuxed encoded media data from a data source.

Q. And is demuxed another word for demultiplexed?

A. That's right. And that is a hidden part of the limitation. So the MediaExtractor satisfies that portion of the limitation.

Q. And did you confirm that the accused products actually use MediaExtractor?

A. That's right. The source code of the accused products for Android Versions 4.0 to 6.0 in Plaintiffs' Exhibit 2042 confirm that the same MediaExtractor is used. As well as for Android Version 6.0 to 8.0, the MediaExtractor is used, as well,

confirming that there's a demultiplexing unit that's configured to separate the multiplex audio and video data.

Q. So just to sort of cap this off, can you explain how PX-2039 speaks to the question of whether there is in the accused products a demulti -- demultiplexing unit, according to the claim limitation?

A. Yes. So it summarizes as an Android. Because all these are Android products. Android mandates that you have this audio decoder and a video decoder that are -- that when there's a multiplexed stream as shown on the bottom right of PX-2039. They will demultiplex it and separate them into a coded audio data of the type AAC encoded picture of the type H.264.

Q. And this is required --

A. Yes.

Q. -- right?

So is Limitation 1A satisfied?

A. Yes, it is.

Q. In all the accused products?

A. Yes.

Q. Let's move on to 1B. Is limitation 1B an audio processing unit configured to decode the separated coded audio -- audio data. Is that -- is that found in each of the accused products?

A. Yes, it is.

Q. And what does PX-2039 tell you about that?

A. The 2039 that I discussed earlier confirms that for Android, you support the use of an audio processing unit that decodes AAC, which is called advanced audio codec, and that is confirmed by the exhibit that shows where I've highlighted there the user of AAC decoder.

Q. So 1B is satisfied for all the accused products?

A. Yes, it is.

Q. So let's take the next two together because they're related.

Is -- are Limitations 1C and 1D a picture decoding unit configured to decode the separated coded picture data in accordance with 1D which sets out of the structure for that picture decoding unit, are those two limitations satisfied in all the accused products?

A. Yes. Both Limitations 1C and 1D referring to the picture decoding unit and the wherein clause are satisfied by all the accused products.

Q. Let's take this in pieces. Let's talk about the first part first. A picture decoding unit configured to decode the separated coded picture data.

Here's PX-2039 again. What does that tell you about whether there's a picture decoded unit in the accused products?

A. Yes, the Android document that talks about the supported media format, which is PX-2039, confirms that there's an H.264 AVC decoder, and that confirms that there is picture decoding

unit that's configured to decode the separated coded picture data, and it's coded in the format of H.264.

Q. And did you see something similar in the description of the Nexus phone?

A. Yes, on the left with respect to Exhibit 0464, the Nexus 6P, which is a popular product also supports H.264.

Q. And have you seen similar documentation for all the accused products?

A. I have.

Q. And still -- still talking about the picture decoding unit, can you explain the significance of the XML files from Huawei that are in Plaintiffs' Exhibit 2304 through 2310?

A. Yes. So each of these accused products has a hardware video decoder. And depending on the origin of the platform, if it is from Qualcomm, Exhibits PX-2038, 2039, and 2310 on the bottom of this table show that you have what is called a Qcomm or Qualcomm video decoder of the type AVC, which is the H.264, advanced video coding.

Similarly, Exhibits PX-2306 and 2307 confirm that other products have a HiSilicon hardware decoder for video. And that is shown again as the OMX HiSilicon, h-i-s-i, video.decoder.avc.

Then there are some other products with some third-party multi-standard MSVDX on the top, and those are also used in certain other products. So this confirms that the

products have a hardware video decoder.
Q. So from PX-2304 through PX-2310, are those the XML files for -- that -- that apply to all the accused products?
A. That's right. No, there are more, but these apply to most of them.
Q. Okay. So now that we're -- now that we're talking about picture coding unit, did you also look at the H.264 standard?
A. Yes.
Q. And can you tell us -- so now we're down -- now we're down to the wherein clause, and it's -- it's a little complicated. But can you tell us how the different sections of the standard that you rely on tell you that -- that all of the limitations of the wherein clause are satisfied?
A. Yes. First of all, in the sections that are listed here, 8.3, 8.4, 8.5, and 8.5.1 are portions of the Exhibit 112, which is the H.264 standard. I've color-coded the claim limitation on the top. So with respect to orthogonal transformation and quantization, the specific section that discusses and confirms that this is present is Section 8.5 that is coded in purple that discloses a transform coefficient decoding process.

The fact that it blocks is confirmed in yellow in Section 8.5.1, for instance, where I disclose that there's a section called residual blocks of size 4.4 -- four-by-four. And then with respect to inter prediction in blue, you have Section 8.4 that describes how inter prediction is done. And

then in green, you have the intra prediction that confirms that -- Section 8.3 confirms that intra prediction is done.

So piece-by-piece, you can see that the wherein clause where there is a picture decoding unit that includes a block decoding unit configured to decode coded block data, and the coded block data being obtained by dividing a picture signal into plural blocks, generating a residual block image from the block image of the respective blocks and a predictive block image obtained by intra prediction or inter prediction. And then the coefficients obtained by orthogonal transformation and quantization on the residual blocks are all met by the -- by the compliance with the

H. -- H.264 standard.

Q. And does this claim limitation, does it relate back to the demonstration that you showed the jury in terms of Figure 17?

A. Yes. The Figure 17 showed you how you reconstruct the image at -- from the YouTube video step-by-step. And each of these correspond to those limitations, and Huawei admits that all these sections are present.

Q. Huawei admits that Sections 8.3, 8.4, 8.5, and 8.5.1 are used in all of the accused products?

A. That's right.

Q. So have we shown that 1C and 1D are satisfied?

A. Yes.

Q. Is Limitation 1E said block decoded -- decoding unit

includes a coefficient number decoding unit configured to decode the coded block data to obtain the number of non-zero coefficients which are coefficients included in a current block to be decoded and having a value other than zero?

A. Yes. All accused products satisfy Limitation 1E with respect to the block decoding unit.

Q. And what do you -- what do you look at to know that all the accused products are encoding the number of non-zero coefficients?

A. Looking at the H.264 standard, which is Exhibit 112, Section 9.2 that I briefly covered before confirms that in Item 2, that the total number of non-zero transform coefficient levels, which is called total -- total coefficient or TotalCoeff, that takes a value coefficient_token as an input and then outputs the number of non-zero coefficients. So this confirms that the H.264 Section 9.2 actually satisfies the limitation of a coefficient number decoding unit configured to decode the coded block data to obtain the number of non-zero coefficients.

Q. And does Huawei admit that all the accused products use Section 9.2 of the H.264 standard?

A. Yes, they do.

Q. So at the end of Clause 2, you were just reading, there's a reference to 9.2.1?

A. Yes.

Q. So here's 9.2.1. Can you explain further why -- how this relates to the number of non-zero coefficients?
A. Yes. Section 9.2.1 of the H.264 standard confirms that a total number of non-zero transform coefficient levels are obtained from using the function TotalCoeff that is shown in yellow.
Q. And what's the relevance of Section 7.4.5.3.2?
A. That confirms that this is actually returning. Returning means it's actually calculating the number of non-zero transform coefficients that are derived from the coefficient_token that is shown there.
Q. So Limitation 1E, is that satisfied by all the accused products?
A. Yes, it is.
Q. Let's go on to the next one. Do all the accused products satisfy Limitation 1F, a unit configured to obtain coefficients corresponding to a residual block image of the current block by decoding the coded block data?
A. Yes, all accused products satisfy Limitation 1F.
Q. How do we know that the accused products all have a unit that's configured to obtain coefficients that correspond to a residual block image?
A. The same Section 9.2 that deals with the CAVLC parsing process in the H.264 standard, in Section 3, confirms that. The non-zero transform coefficient levels are derived. And

this means that their actual values of the coefficients themselves are derived, and that confirms that is a unit configured to obtain coefficients corresponding to a residual block image. And the fact that these are from residual block image is also confirmed through the use of the -- the coefficients. The coefficients correspond to the residual because that's where the frequencies come from.

Q. And as before, does Huawei admit that all the accused products implement Section 9.2?

A. Yes.

Q. Professor, do all the accused products satisfy Limitation 1G, a unit configured to obtain the residual block image of the current block by performing inverse quantization and inverse -- inverse orthogonal transformation on the coefficients corresponding to the residual block image of the current block?

A. Yes. All accused products satisfy Limitation 1G, and I describe the basis for that on Slide 65.

Q. So let's -- let's -- let's take this in pieces because there's a whole lot here.

How do we know that there's a unit that's configured to obtain the residual block image?

A. Yes. So Sections 8. -- so where there is a residual block image, I highlight that in yellow. And you can see here that Sections 8.5.12 specifically call out residual blocks. And that I've highlighted in yellow.

And then the next portion --

Q. Let -- let me -- let me ask you about that. So, for example, in Section 8.5.12, the very last line, you see that r with a little ij next to it?

A. That's right.

Q. What does that stand for?

A. R means residual, and ij means the number. So 1,1 means the residual at location value 1,1. And then it also says that these residual values are outputs, so that means you are satisfying the obtaining portion of this limitation in calculating the residual of a block.

Q. Does the -- does the standard say that the residuals are in blocks that are four rows by four columns?

A. By four-by-four blocks, yeah -- four-by-four blocks, yeah.

Q. Is that the same as the patent?

A. Yes.

Q. So can we see something here that tells us that the residual block image is obtained by using something called inverse quantization?

A. Yes. So I've highlighted the inverse quantization in something --

Q. Let me -- let me just ask you first. What is inverse quantization? How does this relate to what you showed us in Figure 17?

A. So in the encoder, you actually carry the quantization. In

the decoder, you want to calculate the inverse quantization because you have to reconstruct the image. So there's a process called scaling that I show in Section 3.134, and the scaling says you are multiplying the transform coefficient levels by a factor resulting in the transform coefficients. So that is essentially what inverse orthogonal transformation is doing, com -- combined with quantization, which is the scaling.

Q. So how do we know that in order to obtain the residual block image, that inverse -- inverse orthogonal transformation is also being used?

A. Yes. So Sections 8.5.12.2 confirm the transformation process, which is essentially the newest transformation, and 8.5.12 on the top also confirms this inverse transformation that is carried out on these scaled transform coefficients.

Q. And, once again, does Huawei admit that each and every accused product implements each and every one of these sections of the H.264 standard?

A. Yes, it does.

Q. Do all of the accused products satisfy Limitation 1H, a reproducing unit configured to reproduce a block image of the current block from the obtained residual block image and a predictive block image obtained by intra-picture prediction or inter-picture prediction?

A. Yes, all the accused products satisfy Limitation 1H with respect to the reproducing unit.

Q. And just -- just for the -- to provide -- to provide some context, how does this relate to what we saw in Figure 17?
A. Yes. So here, you are actually taking the residual and adding it to the predicted image.

So you have the Frame 1 of the two people talking. So you predicted either through inter-picture prediction, which means the previous frame, or the intra-picture prediction, which means the current frame. So this is how we're reconstructing the block image from the residual.

Q. This is the end of the line?
A. Almost, yes.
Q. How do we know from the standard that there has to be a reproducing unit in the accused products?
A. Yes. So break this limitation down like others into a color-coded representation. So what is shown in yellow is the reproducing unit, and that is confirmed by Sections 8.5 and 8.5.1 where it discloses that the picture is actually reconstructed from blocks.

Then if you look at the purple block, that is the residual block, and the residual block you will notice is something called rij shown in purple in the equation 8.299. R stands for residual and i and j for the location of the block.

Q. So let me -- let me stop you.

So let -- let's go back to block image.

A. Yes.

Q. How do we know that the reproducing unit has to reproduce a block image?
A. Yes, so uij is the block image, and uij is shown in the left in green of the equation in the bottom part, 8-299.
Q. So what -- what does it mean in Section 8.5.1 at Line 5 when the standard says uij for i,j=0...3? What does that mean?
A. So it means that if you take i is equal to 0, j is equal to 0, that's the first block on the top left.

If i is 1 and j is 1, it means that is the block at Location 1,1.

So the way it is reconstructing the picture is to reconstruct each blocks, and each block is called uij?
Q. Okay. So tell us now how we know that the re -- the reproducing unit has to reproduce -- reproduce block images using the residual block image?
A. Yes. So if you look at equation 8-299, you will see on the left, there is a block, which is the block image. That is uij. Uij is equal to rij, which is in purple, plus the prediction of a block. So "pred" means prediction.

So this is exactly what the claim limitation says. The claim limitation says you're obtaining a residual -- you're obtaining -- you're reproducing a block image of the current block from the residual and a predictive block image using intra or inter prediction.

So equation 8-299 confirms that you're summing the

residual and the prediction to create uij.
Q. And as before, does Huawei admit that each of the accused products implements these two sections of H.264?
A. Yes, and the next slide will show how the prediction is done.
Q. Okay. I remember from -- from Figure 17, there were two different ways to do prediction. Are these those two ways?
A. Yes, Section 8.3 confirms that H.264 supports intra prediction, and Section 8.4 confirms the inter prediction. So both of these are confirmed as required by the claim Limitation 1H.
Q. And does Huawei admit that Sections 8.3 and 8.4 of the standard are used in -- in each and every one of the accused products?
A. Yes, it does.
Q. Do all the accused products satisfy Limitation 1I: Said coefficient number decoding unit includes: A determining unit configured to determine a predictive value for the number of non-zero coefficients included in the current block based on the number of non-zero coefficients included in a decoded block located on a periphery of the current block?
A. Yes, they do. All accused products satisfy the coefficient number decoding unit Limitation 1I.
Q. And can you explain in terms of a couple of sections of the standard how we know that there's a determining unit that

determines a predictive value?
A. Yes. So as I described earlier in my explanation of the patent on the right, you have blocks, neighboring Blocks A and B. They are used to predict the value 5 from Block X.

So the standard actually lays out this process in exactly the same way. So if you look at Section 9.2.1, you will notice in the Subsection 6 that there's a neighboring Block A and B. And A and B are the neighboring blocks that are above or to the left. And these are -- have a number of non-zero coefficients called nA or nB.

So in this case, nA is 6, nB is also 6.

Q. So just -- just to be clear, in the -- in the nomenclature of the standard, what is the predictive value?
A. The predictive value is 5.
Q. And how can we find in the standard the -- the blocks located on a periphery, how are those denoted?
A. They are denoted by values of the number of non-zero coefficients in Blocks A and in Blocks B, and these are called nA and nB.
Q. Okay.
A. And nC is the predictive value. nC is the variable that is described in Section 9.2.1 that is the predictive value of the number of non-zero coefficients.
Q. And does Huawei admit that all of the accused products implement these two sections of the H.264 standard?

A. Yes, it does.
Q. And -- and can we actually see in the standard exactly how the predictive value is calculated?
A. Yes, it is. So if you look at Section 9.2.1, you'll notice that the predictive value nC of 5 is calculated from the values of nA and nB. So nA is 6, nB is 6, and then you add 1, and then divide by 2. So this double arrow means you divide by 2. So that gives you a value that you can use for the variable.
Q. So is -- is the -- the equation the first equation that you've highlighted in green in the standard, is that sort of like an average?
A. It's like an average, and used with the neighboring blocks.
Q. And you said divided by 2, I don't see a divided by 2 in there. Where does that come from?
A. So if you right shift this value, so if you see the double arrow, the double arrow says you're shifting the number by 2, by 1, that means you're dividing it by 2 in computer --
Q. So, basically, in engineering speak, double arrow to the -- to the right and a 1 is divided by 2?
A. That's right. And -- and -- and two arrows to the left is multiplication by 2. So that confirms that the limitation of decoding unit configured to determine the predictive value for the number of non-zero coefficients based on the number of non-zero coefficients including -- included in a decoded -- in a decoded block located on the periphery of the current block.

And that's exactly how the '238 patent teaches it.
Q. Let me ask you about the next limitation. Do all the accused products satisfy Limitation 1J, a selecting unit configured to select a variable length code table based on the determined predictive value?
A. Yes. All accused products satisfy Limitation 1J.
Q. So is -- is this one of those terms where the Court's given a special definition to some of the language?
A. Yes.
Q. And what -- what term did the Court provide a special definition?
A. The Court interpreted and provided a construction for the "variable length code table" as a table for transforming each variable length code into a value that denotes the number of non-zero coefficients in a block, within a given table each variable length code is unique and maps to one unique value.
Q. And did you apply the Court's special definition in your analysis?
A. I did.
Q. Okay. So how do we -- how do we know from the standard that the accused products must have a selecting unit that's configured to select a variable length code table?
A. Yes. So this, again, from Section 9.2.1 and Table 9.5 of the standard, which is Exhibit 112, confirms this.
So as I've highlighted in yellow, the standard

explicitly discloses the selection of the applicable column of the table. So if you remember the example from the patent, the Charts 3 and 4 where you selected a column dependent on the value of the predictive value, exactly in the same way you select one of these six columns, four of which are highlighted in yellow.

So, for example, if you have an input of 0111, you select this -- in this particular case, you'd select an output of 5 using the Table 3 in the example. Here you use one of these columns to make the selection as described by the standard.

Q. So is this variable nC that's described in the standard, is that the same nC that we just talked about getting by basically averaging the number of non-zero coefficients in the neighboring blocks?

A. Yes, nC is the average of the number of coefficients. It's the predictive value as required in the claim limitation.

Q. As so -- and so once we have the predictive value nC, we use it to -- to pick one of the four columns in Table 9.5?

A. Yes, because nC was 6 in the example that we saw. You pick the -- the one, two, three, four -- the fifth column from the left, which is between 4, less than equal to nC, less than equal to 8.

Q. So is -- in Table 9.5, are each of the columns that you've highlighted yellow that reference to one of the nC values, is

each one of those a -- a variable length table? Is that --
A. Yes. Each one of them is a separate table, as disclosed in the '238 specification, Charts 4 and 3.
THE COURT: Let me remind both of you, it's important that answers not be given until questions are asked and questions are not asked until answers are given. It's important for you not to speak over each other.
MR. BURGESS: Sorry, Your Honor.
THE COURT: And we're beginning to get a little bit of that, so let's try to avoid that.
MR. BURGESS: We'll do better.
THE COURT: Let's proceed.
Q. (By Mr. Burgess) Let's talk about the special definition that the -- that the Court provided.
Will you please explain to the jury how Table 9.5 of the standard shows that the Court's construction is satisfied?
A. Yes. So I put the Court's construction on the top left. The Court has construed what variable length code table is, and I've put the table -- the set of tables from the specification of the standard on the bottom, which is Table 9.5.
So let us look at a variable length code -- for example, 001 shown in yellow. The table, based on the value of nC, which is the predictive value, let us say the predictive value nC is between 0 and 2, so you're selecting the third column.

What it does, it maps 001 to the value 2,2 shown in blue. And you'll notice that if you look at all the values above and below, 2,2 is unique. There's no representation of 2,2 anywhere in that.

Furthermore, in the -- in that particular VLC table, 001 appears only once, and it is also unique. So the Court has required that the variable length code, which is Column 3, is unique, and it maps to one unique value which is 2,2. So that confirms that every single portion of the limitation is met.

Q. Just to be clear, does the value that's -- that's mapped to denote the number of non-zero coefficients in a block?

A. The value, yes, it denotes the number of non-zero coefficients because you're using a function called total coefficients that operates on the coefficient_token.

Q. And does the Court's construction say that that value isn't allowed to indicate anything else?

A. It does not.

Q. So do all the accused products satisfy Limitation 1J?

A. Yes, they do. And Huawei also confirms that this section is met.

Q. Professor, do all the accused products satisfy the last limitation, 1K, a variable length decoding unit configured to perform variable length decoding on a coding stream which is generated by coding the number of the non-zero coefficients included in the current block by using the selected variable

length code table?
A. Yes, all the accused products satisfy Limitation 1K.
Q. And do we have, again, for this limitation, some special definitions provided by the Court?
A. Yes. The Court has construed variable length code table that we already discussed before. It also construed generating by coding the number of non-zero coefficients included in the current block as generated by transforming the number of non-zero coefficients included in the current block into a variable length code.
Q. And how did you treat the Court's special definitions in your analysis of this last limitation?
A. I have applied this to the claim language and analyzed the products accordingly.
Q. How does the LTE standard tell you that all the accused products must have a variable length decoding unit that's configured to perform variable length decoding on a coded stream which is generated by coding the number of the non-zero coefficients included in the current block?
A. Yes. You must be referring to the H.264 standard.
Q. Yes.
A. Yes. So we are referring to the H.264 standard, Section 9.2.1 and Table 9.5. The H.264 standard confirms that there is a variable length decoding unit, and it's configured to perform variable length decoding, as I show in green, that you're

actually decoding the number of non-zero coefficients by using the function total coefficients that operates on the coefficient_token. And it does -- it does so by selecting one of the six VLCs specified in Table 9.5. So there are six VLC tables as for the standard.

Q. And six -- by six VLC tables, you mean variable length code tables?

A. That's right, as construed by the Court which we show right here are unique and a map to a unique value. And as an example, I have picked one of those tables that corresponds to an nC value of 6, so I've shown that table in yellow. And there's a unique mapping. And as I showed earlier, 001, for example, or 1101 maps to 2,2. And 2,2 is unique in that table, as well as 1101 is unique in the fourth -- in the fifth column.

Q. And does Huawei admit that all the accused products implement Section 9.2.1 and Table 9.5 of the H.264 standard?

A. Yes, it does.

Q. So we've been through all the limitations of the claim. I've checked them off as we've gone through them. Having completed that exercise, what can we conclude about whether -- or I should say what do you conclude about whether each and every one of the accused products infringes Claim 1 of the '238 patent?

A. As I've described in my analysis, I've gone through each and every limitation of Claim 1 and confirmed that each and

every product satisfies each and every limitation of Claim 1, that the accused Huawei products infringe Claim 1.

THE COURT: All right. Counsel, I think at this point, it's probably an appropriate time to break for the evening. I know that you have additional direct that's going to go quite some additional time. And I'm not prepared to hold the jury any longer this evening.

So ladies and gentlemen, we're going to recess at this time. I'm going to ask you to take your notebooks and leave them closed on the table in the jury room. I'm going to ask you to be back in the jury room and assembled and ready to start by 8:30 in the morning. So you probably need to get here 10 or 12 minutes beforehand, but we'll try to start as close to 8:30 as we can.

Just so you'll know, members of the jury, my experience, since I've been on the bench, is that jurors in our area would rather work longer days and fewer days than shorter days and longer number of days.

So for planning purposes, you can expect what we've done today, and approximately this time of the day to bring things to a close for the day is about what we'll have happen throughout the rest of the trial. And if we do that, it makes for a long day, but it means we can finish in a shorter number of days.

And as I say, juries routinely tell me after trials

are over they'd rather be away from their families, their work, their other responsibilities a shorter number of days even if we work more hours in each day. So that's what we're going to try to do in this case.

So we'll try to start each day at approximately 8:30, and somewhere in this neighborhood, we'll try to stop each day. And you can in a -- in a non-exact sense, in an estimate sense, you can rely on that and plan for that kind of a schedule going forward.

Let me remind you to follow all the instructions I've given you. This is the time when you get home tonight, whoever is there is going to ask you what happened in court today. Give them the answer I told you to give them. Blame it on me. Don't discuss the case with anyone in any way. Don't communicate about it in any way, including among yourselves. Follow all the other instructions I've given you. Travel safely. And we will see you in the morning. You're excused for the evening.

COURT SECURITY OFFICER: All rise for the jury.

(Jury out.)

THE COURT: Please be seated.

You can step down, Dr. Madisetti.

Counsel, we have used, according to my calculations, exactly three hours for today of your allotted trial time. According to my calculations, Plaintiff has

10 hours and 43 minutes remaining, and Defendants have 12 hours and 17 minutes remaining.

Also, let me remind you that it's the Court's practice before bringing in the jury beginning with Day 2 of the trial and throughout the trial to have counsel read into the record, before the jury is brought in, those items from the list of pre-admitted exhibits that you have used during today's portion, the preceding day's portion of the trial.

So -- so representatives of both Plaintiffs and Defendants should be prepared to do that before 8:30 in the morning.

Likewise, I'll expect you to meet and confer over demonstratives and other issues that you have. And if there are issues that survive the meet and confer process, which I hope is not the case, but if there are such disputes, I'll be available in chambers to take those up with you not later than 7:30 tomorrow morning.

With that, are there any questions from either Plaintiff or Defendant before we recess for the evening?

MR. STEVENSON: Nothing from the Plaintiff, Your Honor.

THE COURT: Anything from Defendants?

MR. SMITH: No, Your Honor.

THE COURT: We stand in recess until tomorrow morning.

COURT SECURITY OFFICER: All rise.

(Recess.)

CERTIFICATION

I HEREBY CERTIFY that the foregoing is a true and correct transcript from the stenographic notes of the proceedings in the above-entitled matter to the best of my ability.

/S/ Shelly Holmes 8/20/2018
SHELLY HOLMES, CSR-TCRR Date
OFFICIAL REPORTER
State of Texas No.: 7804
Expiration Date: 12/31/18